THE

AMERICAN MEDICAL AND PHILOSOPHICAL REGISTER.

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ORIGINAL COMMUNICATIONS.

I.

Sketch *of the* Elgin Botanic Garden, *in the vicinity of the City of New-York.*

(With an engraved view, by Leney.)

This institution, the first of the kind established in the United States, is situated about three and a half miles from this city, on the middle road between Bloomingdale and Kingsbridge. The ground, consisting of about twenty acres, was originally purchased of the corporation of this city, in 1801, by Dr. David Hosack, the founder of the establishment. The view from the most elevated part is variegated and extensive, and the soil itself of that diversified nature, as to be particularly adapted to the cultivation of a great variety of vegetable productions.

Immediately after the purchase, the proprietor, at a very considerable expense, had the grounds cleared and put in a state of cultivation, arranged in a manner the best adapted to the different kinds of vegetables, and planted agreeably to the most approved stile of ornamental gardening. A conservatory for the preservation of the more hardy green house plants was also built.

As a primary object of attention in this establishment was to collect and cultivate the native plants of this country, especially such as possess medicinal properties, or are otherwise useful; among others, such gardeners as were practically acquainted with our indigenous productions, were employed to procure them, and by the distinguished liberality of several scientific gentlemen in this country, there were in cultivation at the commencement of 1805 nearly fifteen hundred species of American plants, besides a considerable number of rare and valuable exotics.

In the year 1806, very important additions were made to the collection of plants, from various parts of Europe, as well as from the East and West Indies. A second building for their preservation was also erected, and the foundation of a third laid, which was completed in the following year. In the autumn of the same year, 1806, a catalogue* of the plants, both native and exotic, which had been already collected, and which amounted to nearly two thousand, was published. Since that time the Botanic Garden has been greatly improved. The buildings, which are erected on the most recent plan adopted in institutions of this kind, consist of three large and well

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* A Catalogue of Plants contained in the Botanic Garden at Elgin, in the vicinity of New-York. By David Hosack, M. D. Professor of Botany, &c. New-York. Swords. 1806.

constructed houses, exhibiting a front of one hundred and eighty feet. The greater part of the ground is brought in a state of the highest cultivation, and divided into various compartments, calculated for the instruction of the student of botany and medicine, and made subservient to agriculture and the arts. The whole establishment is surrounded by a belt of forest trees and shrubs, and these again are enclosed by a stone wall two and a half feet in thickness and seven feet in height.

As the expense requisite to effect these several purposes far exceeded the calculations the proprietor had originally formed, and being still desirous of perpetuating the institution, he was induced to offer the whole establishment for sale to the state at a fair and equitable valuation. An almost perfect unanimity of opinion prevailing among the gentlemen of the medical profession, relative to the advantages to be derived from an institution of the kind, as necessary to complete a system of medical instruction, and similar sentiments being entertained by many others who felt an interest in the literary reputation of the state, application was made to the legislature, that permanent provision might be obtained, by the purchase of the Botanic Garden by the state. On this occasion memorials from the state medical society, the medical society of the county of New-York, and several other counties in the state, from the corporation of the city, the governors of the New-York hospital, the students attending the medical schools, and from many of the most respectable inhabitants of the city, were presented. The legislature accordingly passed an act, during the session of 1810, for the purchase of the establishment, and placed the same under the direction of the regents of the uni-

versity. For further information on this subject, the reader is referred to a production, entitled, a " statement of facts relative to the establishment and progress of the Elgin Botanic Garden, and the subsequent disposal of the same to the state of New-York." The founder of the institution has also lately published a second edition, greatly enlarged, of the catalogue of plants cultivated in this establishment, arranged in alphabetical order, and embracing the generic and specific names of Linnæus, the synonyms of various authors, and the popular appellations by which they are known, &c.

Recently the institution has been committed to the superintendance of the trustees of the college of physicians and surgeons of this city, to be by them kept in a state of preservation, and in a condition fit for all medical purposes, and at all times open to the admission of such medical students as may resort thereto for the purpose of acquiring botanical science. It is confidently hoped, that as the improvements of this establishment for nearly ten years, while in the hands of a private individual, have far exceeded the expectations of the most sanguine, that its future progress will be proportionably great under its present governance.

II.

Observations *on the* Oil of Turpentine *in the cure of* Tænia. *Extracted from a letter to* David Hosack, M. D. *by* Colin Chisholm, M. D. F. R. S. &c. &c.

Clifton, November, 1810.

I shall detain you at present no further than to say something of the new views of the animal economy, pre-

sented to us by the capacity it is proved to possess, of receiving, what was formerly considered almost certain death, large quantity of oil of turpentine with very little inconvenience, and certain effect, in the removal of the disease for which it is administered, tænia. The interesting communications on this subject in the Edinburgh Medical Journal, and other periodical works, you are of course acquainted with; and indeed, the evidence of the safety of oil of turpentine as an anthelmintic is there so clearly stated, and so strong, that no reasonable doubt should have been entertained of it. Notwithstanding this truth, the administration of two ounces of this fluid is so extraordinary a fact, that the mind hesitates in giving belief, until it is satisfied by demonstration. I felt this hesitation; but now I give entire belief, because I have put it to the test of experience. By my desire, a sensible and intelligent apothecary of this place gave the oil of turpentine to a man who had laboured many years under tænia; and had been so distressed that he declared he would expose himself cheerfully to any danger that presented him with the prospect of getting rid of his most troublesome disease. Portions of the worm were frequently discharged as he walked, and, in a word, his situation became insupportable. On the morning of July 28, 1810, Timothy Carroll, servant to the Rev. Mr. Keiley, took one and an half ounce of rectified spirit of turpentine. About an hour after it caused a little vomiting, with great burning and swelling of the abdomen; about an hour and forty minutes it began to purge violently, and brought off an immense number of small pieces of the tænia. The fourth evacuation brought off, in one piece, eight feet two inches; and when the whole operation was completed, and the several parts collected

and put together, they amounted to the enormous length of twenty-one yards eight inches. The morning after a full dose of castor oil was given, which operated freely, but nothing extraordinary was discharged. The patient continued for nearly a day after somewhat giddy, and felt, he said, as he should have done after intoxication. No other unpleasant effects took place. Is it not a very singular circumstance, that the anthelmintic power of this medicine should have been hitherto so imperfectly understood ; indeed, I may say, unknown ? Is it not equally singular, that the minds of medical men should be till of late so much under the influence of fear in the exhibition of it, as to deprive the public of the wonderful benefit it may be made productive of. From the period at which the oil of turpentine came much into use as a vulnerary, internally as well as externally employed, this dread has prevailed among physicians. Its use as an external vulnerary seems to have commenced about the middle of the 17th century, (1678) in the practice of Mr. Yonge, a naval surgeon at Plymouth : and he takes occasion to enumerate the diseases to which it is internally applicable, and the writers who previous to his time had recommended and employed it. But in all these cases, he says, " its dose is from five drops to one scruple and half a drachm, always taken in a pertinent vehicle, never alone." See the curious and scarce work *Currus Triumphalis è Terebenthô.* (Lond. 1679. pp. 89.) Riverius, a little before Mr. Yonge's time, (about 1650,) speaks much of it as a purgative in diseases of the kidnies and bladder ; and he indeed seems to have had tolerable boldness in the exhibition of it. " Inter purgantia recensetur terebinthina, et in hoc affectu valdé commendatur, quia simul alvum laxat et ulcus abstergit. Eâque cum pulvere liquiritiæ

exhibendi est ad semi unciam cum aqua plantaginis lota," &c. (*Prax. Medicæ*, let. 14. c. 5. *Lugd.* p. 250.) The internal use of turpentine has been considered as productive of injurious effect as that of the oil, and, although thus sanctioned by the authority of Riverius, has never, I believe, been resorted to in quantity equal to that stated in the foregoing passage. But even a century before Riverius wrote, turpentine was highly extolled as a purgative in strangury, by Piso. His language is highly expressive of conviction of the validity of the fact: "*Supra modum* etiam conducit terebinthina lota in aqua rosarum, aut intybi, *nucis magnitudine*, *aliquando duarum*, *triumve* accepta." And the quantity seems even to exceed that employed by Riverius at a subsequent period. (See *Nic. Pisonis libri de cognos. et curand. morbis*, Frankfort ed. 1585. p. 729.) It would therefore appear that confidence in this medicine has diminished as medical experience has proceeded; or as opportunities might have offered of developing and confirming its qualities. For Dr. Cullen, in his lectures on the materia medica, nearly two hundred years after Piso, thus states the result of his observations on turpentine and its oil: "The diaphoretic virtue of these balsams seems the foundation of their use in the sciatica; in which disease Pitcairn gave oil of turpentine in doses of one or two drachms, with success. For my part I never could come up to this dose, from the heat and uneasiness produced in the stomach," &c. (*Lect. on Mat. Med.* 4to. 1772. p. 266.) But is such a conjecture reconcilable with the many facts which have been produced in the course of the present year, all tending to the establishment of the proposition, that the oil of turpentine may be received into the human stomach in quantity four times exceeding that exhibited by Riverius, and eight

times that given by Pitcairn? Is it not more probable that prejudice, submission to authority, or an indolent belief, the very bane of medical science, have severally or conjointly suppressed inquiry, or deemed it unnecessary. The truth was brought to light, we are told, by a mechanic of the city of Durham; (*Edin. Med. Journ.* vol. 6. p. 253 or 376.) by a man totally uninfluenced by these "impedimenta scientiarum." The mist being dispersed, or the yoke being thus happily taken off, several enterprising and ingenious physicians have placed that truth in its true light, that it is to be hoped it can never again be lost sight of. The various attempts which have been made either to disguise the taste and smell, or to increase the efficacy of oil of turpentine, have proved completely fruitless, and indeed have evidently given the medicine qualities and directions in the animal economy altogether repugnant to those naturally possessed by it, when left in its unadulterated state. It is hence you find some medical men thus absurdly refining, telling us that the oil of turpentine does not possess the qualities attributed to it by those who administer it as nature has presented it to the use of mankind.

III.

An account of the FEVER *which lately prevailed at the drowned lands in Orange county, New-York. Addressed to Dr.* DAVID HOSACK, *in a letter from Dr.* D. R. ARNELL, *dated August* 2, 1810.

THE drowned lands of Orange county lie in the towns of Goshen and Minisink, and contain about thirty thousand acres; the soil is very rich and deep; great quanti-

ties of grass and other vegetable substances grow on its surface, and they are generally overflowed with water the greater part of the season. The proprietors have been incorporated into a company for draining them, and have employed a large number of workmen for that purpose the three last summers. The country around them is hilly, rough and uneven, and has been visited with remittent and intermittent fevers during the autumn, for a number of years past; but the fever has never put on so malignant and dangerous an appearance as it has the two last seasons, at the outlet of the drowned lands, among the workmen and hands employed in draining them. The outlet is the place where the Wallkill river empties out of the drowned lands, about four and a half miles w. s. w. of the village of Goshen. The river is here about two hundred feet wide, running over a stiff clayey soil, intermixed with a great number of small and large stones, of no distinct character, but a mixture of granite, schoerl, feldspath and schistus; a large bed of schistus lies on the west bank of the kill, and a corner of the rock projects into it, though there are no other stones of that particular character in the kill. A very nauseous and disagreeable smell arises from the clay, as it is dug up by the workmen, in sinking the bed of the river.* The workmen who are employed are mostly foreigners, and the greater proportion of these are Irish; they are boarded in three different houses, two of which stand on the west, and one on the east side of the kill, which are erected and hired for that purpose, and are mostly their own cooks, or have

* The water was confined back on the drowned lands during the day, but at night the gates were opened, and it was suffered to pass off.

male cooks selected from among them; they are generally intemperate, and use large quantities of spirituous liquors daily. Although the water is confined and turned from them as much as possible, still they are obliged to work a great deal in the wet.

The sickness of 1809 began about the middle of August, and continued until the cold weather and heavy rains obliged them to discontinue their operations, which was about the last of November.

The patients generally complained of lassitude, nausea and chilliness, two or three days before they were confined. On the second or third day, the fever was ushered in with a violent shaking or ague, sickness at the stomach and vomiting, low sunk pulse, head-ache, and sometimes diarrhœa; the matter vomited was of a yellow colour, and in considerable quantities: this state continued from one to three hours, when the ague went off, the pulse rose, though not so high as it generally does in common intermittents, the skin became hot to the touch, the tongue and mouth parched and dry, an insatiable thirst, together with a continuance of the pain in the head, vomiting, and diarrhœa. This state formed the first stage of the disease, and continued about twelve or fourteen hours, when either a fair intermission or slight remission of the fever took place. In some instances, (five or six, I think,) after a fair intermission of twenty-four hours, so that the patient would go from one boarding-house to another, the fever returned with cold chills, put on more dangerous and alarming symptoms, and in three instances proved fatal in two or three days afterwards; but in most cases, a remission of the fever now took place, which was of short duration; a febrile action could be discovered in the pulse the whole time, but became increased

in a few hours, and after another slight chill, rose with considerable strength and action; the skin dry and husky, the tongue covered with a thick brown crust: the colour of the skin was in most cases of a yellowish cast, thirst and vomiting returned, and the matter ejected was of a greenish colour, and in considerable quantities. This state continued for three or four days, with slight exacerbations of a quotidian type, when the patient either recovered, or a typhus state of fever ensued, which was marked by a low and quick pulse; the skin, which was before yellow, now became more dark, the tongue covered with a black crust, which, with the mouth, was dry and husky, frequent delirium, prostration of strength, and a cadaverous smell of the body. In this stage of the disease, it was remarkable what good effects stimulants had upon them, and but one died after the disease had advanced so far, which was the child of a man who took his family there in order to cook at one of the boarding houses, but who were all very soon taken sick, and obliged to leave the place. Their recovery, however, from a state of convalescence, was generally slow, owing in a great measure to their intemperance and exposure after they were able to go about; the greater number who died were taken off at the accession of the second stage of the disease, which was on the third or fourth day from the attack, and died in the cold chill which ushered in that stage; those who recovered became convalescent in about twelve or fifteen days from its commencement.

The persons this fever attacked were mostly foreigners; a few of the natives of this country were also seized with it, though they had not lived near the outlet before they went there to work, and but one died, which was the child mentioned above; the others were chiefly Irish, who

were in habits of intemperance, and irregular in their manner of living. One of the overseers of the work observed to me, that he did not believe there was a single night of last season when they were all at once in the boarding-house, but some one was in a state of intoxication, either in the fields or along the fences, and exposed to the night air, and frequently to rain, and that they usually drank a quart or more of spirituous liquors during a day. The former part of the season was hot and dry, while the latter part was wet and cool. Intermittent and remittent fevers and bilious complaints were prevailing through the country at the same time to a considerable degree.

As to the mode of treatment, I was obliged to vary it considerably in different patients, as they did not all experience the same regularity of symptoms as are here described, but such was generally the case. In the first stage I prescribed cathartics of jalap and sub-mur. hydrarg. together with alkalines, particularly the carbonas potassæ ; in the second stage I gave emetics, sudorifics and alkalines ; and the third I treated uniformly with blisters and stimulants, such as brandy, wine and laudanum. Three I bled ; in one case I found manifest advantage, but the other two did not bear the lancet so well. Emetics were given in the second stage of the disease, and answered an excellent purpose ; much bile was thrown up, the nausea and vomiting which was so constant before would be relieved for thirty-six or forty-eight hours, when it would be necessary to give another emetic, which generally had the same happy effect as before. Mercury joined with jalap for a cathartic, in the first stage of the disease, had a good effect ; in one or two instances I gave it in such a manner as to produce an affection of the

mouth and salivary glands, and believe it was useful, but I considered the want of care, attention and proper nursing so great, that I did not employ it as much as I should otherwise have done. I did not employ the bark until the last, or rather convalescent stage of the disease, when I joined it with bitters as a tonic to restore the strength of the system, except in some cases of tertian and intermittents, which happened at the same place. About one in twelve of those who were attacked with the fever in its remittent typhus form died. The disease uniformly commenced with a cold chill and shaking. They had uniformly remissions for five or six days of a quotidian type, but after the typhus state of fever commenced, the exacerbations could not be so distinctly marked. To those who died it generally proved fatal in five or six days after the attack; three instances occurred where it was protracted to a considerable length of time, two of whom had so far recovered as to be able to go to New-York, where they were received in the hospital, and died there. Perhaps it may not be improper here to remark, that the statement which Daniel Brady made to the attending physician, when he was admitted into that institution, was incorrect; he was deaf, and very inattentive to surrounding objects when he first came to the outlet, and had purulent ulcerations in his ears, which he then said were of several years standing; but he there stated that those were affections which came on him in consequence of an attack of the drowned land fever; the anasarcous swellings of his feet came on him soon after the fever left him, and he died in the hospital the 28th of last January, having every reason to suspect a hydrocephalus internus. There were two others who had anasarcous swellings of the feet and legs during a state of convalescence, but were

cured by mercury and blisters. The stomach appeared to be much affected during the whole course of the disease, and this affection was greatly relieved by emetics; when it terminated fatally, I do not think that any of the patients had any thing like a black vomit; in one instance the vomiting appeared something like dirty water, which was ejected about an hour before death: it was no uncommon thing for them to have a bleeding at the nose, but in no instance which I saw was there blood, or any thing resembling coffee grounds, thrown up from the stomach, in any stage of the disease.

IV.

OBSERVATIONS *on* CONTAGION. *Communicated in a Letter to* COLIN CHISHOLM, M. D. F. R. S. *&c. at Clifton, near Bristol, from* DAVID HOSACK, M. D. *&c. of New-York.*

AGREEABLY to my promise in a former communication, I shall now state to you the result of my obervations on the subject of contagion, which has created so much dispute in the medical world, and which divides our profession in the western as well as in the eastern hemisphere. As far as I have examined this subject, it appears to me to be more a dispute about *words* than *facts*. The abuse of the terms *contagion* and *infection*, and the neglect of writers in not annexing to them a precise definition of the manner in which they severally employ them, have, I believe, been the source of our medical warfare, relative to the contagiousness of yellow fever, and some other diseases: *e. g.* the greater number of medical writers enumerate, in the list of contagious diseases, all those

which are in any way communicable from one person to another, whether by *contact*, *fomites*, *atmosphere*, &c. without designating the *circumstances* attending these several modes of communication.

Lind, in his papers on contagion and infection, (which he considers as synonymous terms,) is guilty of this error, in which he has been followed by most writers upon the subject of fever, &c. The late Dr. Bayley, in his account of the yellow fever which prevailed in New-York in 1795, proposed a distinction between *contagious* and *infectious* diseases He made use of the first term to denote such as are communicated under any circumstances of atmosphere, whether pure or impure, as small-pox, measles, &c. *Infectious* diseases he denominated those which are communicated in consequence of an impure or vitiated state of the atmosphere, *i. e.* that the *impurities* of the atmosphere communicate the disease, not that the air contains any *specific material* derived from the patient, except such as may be occasioned by want of cleanliness. This distinction proposed by Dr. Bayley, is, in my opinion, an approach nearer the truth than any of his predecessors has advanced, but it does not present us with a view of the *whole truth*, upon the subject. The visitor or attendant contracts disease from one of *two sources*, either from the filth of the sick room, or from a *specific something* issuing from the body of the sick, the consequence of the peculiar disease under which he labours. If a person visiting another ill of the *yellow fever* or *plague*, derives his disease from the *impure atmosphere* of the apartment, I ask, how it happens, that in all instances he contracts the *same disease* with that of the person whom he visits? Why is his disorder not an *intermittent*, a *remittent*, *jail fever*, or *dysentery*, which are considered the usual produce of filth. If he derives

any thing specific from the sick, his disease is then assuredly not to be considered as occasioned by the *atmosphere*, but depending on the *peculiar condition of the fluids*, or state of the system, induced by the action of a specific poison; in other words, it is to be considered a *contagious* disease. The distinction proposed by Dr. Bayley, inasmuch as it does not account for the communication of the *peculiar form* of fever or disease which is thus propagated, I therefore consider to be insufficient to account for the circumstances attending the communication of those diseases to which it is applied. That I may not be misunderstood, I will suppose A to be ill of *dysentery*, a disease well known to be attended with a *peculiar train of symptoms;* he is in a small confined apartment, his person is neglected, the atmosphere around him is rendered impure and offensive; under these circumstances B visits him, and a few days after is also taken sick with the *same disease*, attended in all respects with the *same* dangerous symptoms which characterize the disorder of A. Dr. Bayley, and those who adopt the doctrine of *infection* as opposed to *contagion*, consider the disease of B to proceed from the *impurities of the air of the chamber*, and not from any thing *peculiar* emanating or secreted from the body of A. But as we may *without hazard*, visit an equally filthy chamber where C lies ill of *cholera morbus*, or D with a *broken limb*, I therefore ascribe the disease of B to something more than the *impure air* of the chamber of A. I ascribe it to a *peculiar virus* generated in his system by the disease under which he labours, and communicated by his excretions to the surrounding atmosphere, rendering it thus capable of producing the same disease in those who may be exposed to its influence.

The communication of this virus from the sick to the well, in whatever form it may be conveyed, as uniformly produces the *same disease* as *inoculation* excites the *small-pox*, or *vaccination* conveys the *vaccine virus*. So far, then, there is something in *common* in the communication of contagious or infectious diseases, and should be accordingly expressed in the language we employ—some of those diseases are conveyed in one form, others in a different; we should then be equally careful to mark those circumstances in which they *differ*, as well as those which they possess in *common*.

Such an arrangement appears to me not only *practicable*, but, at the same time, calculated, in some degree, to harmonize the differences of opinion which now separate the contagionists and non-contagionists. Under these impressions, I propose to arrange those diseases which are communicable from one to another under three heads. First, those which are communicated *exclusively* by *contact*. In this class I enumerate

The Itch,
Syphilis,
The Sibbens of Scotland,
The Laanda of Africa,
Frambæsia or Yaws,
Elephantiasis or Leprosy,
Hydrophobia, and
The vaccine virus.

Neither of those diseases can be communicated in any other way than by *contact;* they are, therefore, *contagious* diseases, in the strict etymological sense of the term. It is also to be remarked that these diseases are never conveyed through the medium of the *atmosphere;* actual con-

tact alone can communicate them from one person to another.

These diseases, acknowledged by all to be contagious, and so denominated by all writers, have a law of communication peculiar to themselves. But there is a second class of diseases also considered as contagious, which are communicated under different circumstances, governed, in this respect, by different laws of communication.

Those to which I now allude are such as are communicable both by *contact* and by the *atmosphere*. In this class I arrange

Small-pox,
Measles,
Chicken-pox,
Influenza,
Hooping-Cough,
Scarlet Fever, and
Cynanche maligna.

Contact, or the *close approach* to the sick, labouring under these diseases, will communicate them to those who are susceptible of their influence—but they are no less communicable through the *medium of the atmosphere*. A *second law*, which governs the communication of this class of contagious diseases, is, that they are communicable in *every season*, in the heat of *summer*, as well as in the cold of *winter*—in a *pure* as well as in an *impure* air, though more readily by the latter than the former. A *third law* of communication in this class of diseases is, that the persons afflicted with them are not generally susceptible of a second attack. I say *generally*, because exceptions are related upon very respectable authority.

This second class of contagious diseases is, therefore, abundantly distinguished from the first; but they are still

associated by most medical writers under the same head of contagious diseases, without assigning to each class its discriminating characters.

The same want of discrimination has, in my opinion, occasioned the numerous disputes among physicians relative to the contagiousness and non-contagiousness of those fevers which I enumerate as the *third class* of diseases that are communicable from one person to another. Under this head I arrange

Plague,
Yellow Fever,
Typhus, *Jail, Ship, Hospital or Lake Fever, and*
Dysentery.

These diseases are only in general communicable through the medium of an *impure* atmosphere: in a pure air, in large and well ventilated apartments, when the dress of the patient is frequently changed, all excrementitious discharges immediately removed, and attention paid to cleanliness in general, these diseases are not communicated, or very rarely so, from one to another. But in an *impure* air, rendered so by the decomposition of animal and vegetable substances, as takes place in low marshy countries, or by concentrated human effluvia, as in camps, jails, hospitals, or on ship-board, they are rendered not only extremely malignant and mortal in themselves, but become communicable to others who approach the sick, or breathe the same atmosphere, which has become *assimilated* to the poison introduced, in so much, that *the same specific disease* is communicated, whether it be the *plague*, *yellow fever*, *typhus*, or *dysentery*.

Hence we account for the fact stated by Sydenham and other writers on epidemics, that the prevailing disease swallows up all other disorders, *i. e.* that during the pre-

valence of an epidemic plague, typhus, dysentery, or other diseases of this class, every indisposition of a febrile sort readily assumes the character of the prevailing disorder. We know this to be experienced in the diseases of other countries, and we see it daily exemplified in our own: both in our cities and in the country towns, when after heavy showers of rain, and the action of a hot sun, a decomposition of vegetable and animal substances takes place, and dysentery or typhus fever is produced, it assimilates the air to itself, whatever may be the acting poison. But under other circumstances of weather and season, the disease thus originating from some local circumstances, or from a peculiar habit of body in the person so affected, does not extend beyond the family in which it first occurred, or, perhaps, the individual in whom it originated.

This class of diseases, therefore, like the former, has a law peculiar to itself; *i. e.* the diseases composing it are communicable, or otherwise, depending upon the *condition of atmosphere*, in which they occur or are introduced—whereas those of the second class are conveyed from person to person, through a *pure* as well as an *impure* medium: but they also are rendered more virulent and malignant in an atmosphere charged with miasmata, than in that which is free from such ingredients.

It is also, I believe, generally true of the diseases of the *third class*, not perhaps excepting the *plague* and *yellow fever*, that they may be taken a *second time*. This has been advanced by the advocates for the domestic origin of yellow fever, as an argument against the contagiousness of this disease.

But, upon the same principle, they must deny the contagiousness of all those disorders which I have enumerated in the *first* class, as *itch*, *syphilis*, &c. for most of them

are also to be taken a second time: yet they are acknowledged by all to be *contagious diseases*. In the same manner, many persons make the *small-pox* a standard, and conclude that yellow fever is not contagious, because it is not communicated under the same circumstances of atmosphere and season, and governed by the same laws, with that disease.

They might with the same propriety conclude, that the *scarlet fever* is not contagious, because it is not attended with the pustules of small-pox. This teaches us the importance of correct language to convey the several degrees of contagion which have been noticed; and that, while we may make use of the terms now in use, we should annex to them such explanations as will convey those different laws of communication which have been enumerated. With those precautions in the use of the language we employ, I believe, the contagionists and non-contagionists will find themselves very much in the situation of those theologians of whom Pascal speaks, and ready to adopt the expression of one of them, when he observes:

"La difference qui est entre nous est si subtile, qu'à peine pouvons nous la marquer nous mêmes."

We would then be ready to admit, that the yellow fever is a contagious or communicable disease, in an *impure* atmosphere; but not generally so where the air is preserved pure and free from noxious materials.

This doctrine too, I believe, will better account for the apparently contradictory facts, which have been urged by the advocates of the two opposing opinions, than any system that has been adopted.

It will also lead to a system of police regulations, which will best insure us against the ravages of yellow fe-

ver when introduced, at the same time that it will teach us carefully to guard against the introduction of it from abroad.

I shall treat this subject more at length upon another occasion, in connection with the evidences of the importation of the yellow fever into the United States.

New-York, July, 1808.

V.

FACTS *relative to the contagious nature of* YELLOW FEVER, *in the pure air of the country. In a letter addressed to* DAVID HOSACK, M. D. *from the Rev.* RICHARD CHANNING MOORE, M. D.

Staten-Island, October 20, 1806.

DEAR SIR,

THE discordant opinions which are held by physicians of the first reputation, upon the subject of yellow fever, have prevented me from replying to your letter of January last, lest the information which I may offer should give rise to such observations, as would necessarily involve me in a medical controversy. From frequent conversations with my worthy preceptor, the late Mr. Richard Bayley, as well as from the perusal of those tracts which had fallen under my notice, I for many years entertained the opinion, that the yellow fever, which hath proved a scourge to our cities, originated exclusively within their enclosures, and was confined to the impurity of their immediate atmosphere.

One of the first circumstances which excited in my mind an impression of the infectious nature of the disease,

and which induced an alteration in my views, was the illness and subsequent death of Dr. Wynant and his wife. This gentleman had been called to take the charge of a man from New-York, ill with yellow fever, upon the north side of this island. The doctor, after an examination of the case, judged it expedient to bleed his patient, and while engaged in the performance of that operation, the man was seized with violent puking, and discharged the contents of his stomach upon his physician's clothes.

From the appearance of the matter so discharged, Dr. Wynant expressed his apprehensions with respect to his own safety ; he continued, however, his attendance faithfully until the patient expired. A few days after the death of the person alluded to, Dr. Wynant was taken seriously ill ; the usual remedies were applied, from the use of which he imagined himself relieved, and expressed a conviction of his recovery. At this moment he was visited by Dr. Henderson and myself. When we entered his room, which was a fine, airy, comfortable apartment, he declared to us his expectation of being restored in a little time ; the danger of the disease he concluded to be completely removed, and he was then in the use of bark and wine. His wife, an amiable woman, was sitting at his bed side, to all appearance in full health, elated with the prospect of her husband's recovery. She however soon discovered that her hopes were premature : the next day the companion of her bosom was wrested from her arms by that fatal disease, the force of which she had flattered herself was subdued.

Upon the day in which the doctor died, which was the 13th of October, '99, Mrs. Wynant was attacked with the same fever which had terminated the life of her husband,

and in the space of five days from its commencement she fell a victim to its malignant, deadly influence.

About three years have elapsed since I was called to visit, in consultation with Dr. Halsey, the son of a favourite parishioner, who was ill with yellow fever, which disease he had contracted in the city of New-York. The day preceding the dissolution of the young gentleman in question, it was necessary, in consequence of a copious involuntary discharge of urine, to change the sheets upon his bed, and whilst the disconsolate father raised the body of his son, I supported his drooping head upon my shoulder. The patient died; I performed his funeral rites, and in a few days was attacked with the disease myself. During my confinement and convalescence, I was visited by several of the faculty. Dr. Bainbridge of New-York was at my house, who expressed his conviction of the serious nature of the disease, from which I was then recovering. It must be remembered that I had not been in the city for *many weeks* preceding my indisposition, and that the young gentleman from whom I received the complaint was confined in an airy, well ventilated chamber, surrounded with every comfort which the tenderness and opulence of his parents could procure.

In addition to the instances above mentioned, I have been informed by Mr. Abraham Banker, a gentleman of learning and intelligence, of the death of Mr. Degroat and his wife. It appears that a person from the city of New-York, by the name of Oswald, had engaged lodgings for himself and family at the house of Mr. Degroat, an opulent farmer upon the north side of this island. Mr. Degroat went to the ferry with his wagon to escort the strangers to his house; and upon his return home, rode next to Mr. Oswald, with whom he was engaged in close

conversation. A few days after the arrival of Mr. Oswald, Mr. Degroat was seized with yellow fever, to which he very soon fell a victim. Mrs. Degroat, who had affectionately attended her husband, was also attacked, and after struggling with the disease a few days, she followed her late companion to the tomb. Mr. Oswald, from whom, Mr. Banker is convinced, the contagious effects of the disease were received, added another to the list of mortality in that family; so that in the space of ten or twelve days, from the arrival of those fugitives from the city, the house was swept of three of its inhabitants.

In the preceding narrative, I have related such facts as have occurred in the circle of a few miles, and I leave you at full liberty to make such use of them as you may deem expedient to the public good. To resist the force of truth cannot be the object of any individual of the faculty of medicine: the learning and the talents of our medical brethren must render them superior to every sinister consideration, and I feel persuaded that their united wish is to advance the health and happiness of their fellow creatures, and to diffuse a light upon a subject, of which, to say the least, the views of physicians are extremely imperfect.

Accept, dear Sir, the assurances of my regard, with which my mind is impressed toward you, and believe me to be your friend and humble servant,

RICHARD CHANNING MOORE.

Dr. D. Hosack.

VI.

FACTS *relative to the Effects of certain Preparations of* ARSENIC *in* INTERMITTING FEVERS, *with occasional Remarks. By Dr. William Currie, Fellow of the College of Physicians, Philadelphia,* &c.

THOUGH arsenic, when taken to a certain extent, has always been ranked among the most dangerous poisons, particular preparations of it have been employed by empirics for more than a century in the cure of agues or intermitting fevers. It appears from an article published in the 3d volume of the British Critic, that it was first introduced into regular practice in the year 1774, by Mr. Mowbray, a surgeon at Biggleswade, who for a small sum purchased from the widow of a German empiric, a recipe for the preparation of a remedy which he had employed as a specific in the cure of agues, the principal ingredient of which was arsenic.

This recipe, Mr. Mowbray, with becoming liberality, communicated to several of his medical friends, and employed it himself with great success. At that time Mr. Mowbray had a shopman whose name was Edwards, who usually prepared this medicine. Edwards afterwards settled at New-Market, and vended it under the name of the ague tincture. This remedy was occasionally adopted in the hospital practice at Staffords, in the years 1781, 2 and 3 ; and in the beginning of 1783, Mr. Hughs, to whom Dr. Fowler pays a high compliment for industry, attention, and abilities in his profession, informed him, that he had tried to imitate these ague drops, and that from a number of experiments he

was convinced they were a preparation of arsenic. This information directed the attention of Dr. Fowler to the use of arsenic in intermittents, and taking advantage of a hint given by Dr. Lewis, he thought of preparing a watery solution of it by means of the fixed vegetable alkali. After trials with such a solution of different degrees of strength, he adopted the following formula. "*R. Arsenici albi in pulverem subtlissimum triti; salis alkalini fixi vegetabilis purificati singulorum grana sexaginta quatuor; aquæ fontanæ distillatæ libram dimidiam, immittantur in ampullam florentinam qua in balneo arenæ posita aqua lente ebulliat donec arsenicum perfecte solutum fuerit; deinde solutioni frigidæ adde spiritus lavendulæ compositi unciam dimidiam, aquæ fontanæ distillatæ libram dimidiam plus vel minus adeo ut solutionis mensuræ libra una accurata sit vel potius unicæ quindecim cum dimidia.*"

This formula Dr. Fowler employed in a very great variety of different cases, and in the generality of them with the most flattering success. In some of the cases, however, when from inadvertency or other circumstances it was administered in over doses, it operated as a violent emetic, attended with griping and purging.

In seven cases of periodical head-ache in which he employed it, six of these were radically cured by taking from twelve to twenty drops three times a day.

He frequently used it from ten drops twice a day, to twenty drops three times a day, and has cured agues by both extremes, as well as by intermediate doses. The latter, however, he found to be more efficacious than the former; but this superior success was counterbalanced by their operative effects being sometimes troublesome and distressing; hence he gives the preference to the in-

termediate doses, which will at the same time in general be found to be sufficiently successful. He recommends the following doses of the preceding formula as the most advantageous and safe, viz.

To patients from two to four years of age, from two to four drops ; to patients from five to seven years, from five to seven drops ; to those from eight to twelve, from seven to ten drops ; to patients from thirteen to eighteen, from ten to twelve drops ; and to patients from eighteen and upwards, twelve drops for a dose.

These he directs to be given to adults in a tea-cup full of water, and to children in a less quantity of the same, at stated hours, whether they coincide with the paroxysm or not, three times a day, for five days. At the end of that time, the fits being suspended, he advises the use of the medicine to be omitted for two or three days, and then repeated for three days, to prevent a relapse. When the sensible effects of the medicine were troublesome, he either omitted the medicine till that effect ceased, or added a sufficient quantity of laudanum to the solution to relieve that effect. When a nausea of half an hour's duration, an evacuation extraordinary a day, or slight griping pains in the bowels follow the exhibition of this medicine, according to Dr. Fowler, they scarcely require notice ; but when either the vomiting or purging becomes distressing and troublesome, opiates in small doses, repeated as the symptoms may require, generally afford effectual relief. The œdematous swelling of the face and eye-lids, which sometimes occur a few days after commencing the use of the medicine, generally subside on discontinuing it ; when they do not, its removal may be accelerated by emetics and cathartics. The efficacy as well as safety of arsenic in intermitting fevers, prepared according to the

above prescription, is not only supported by the testimony of Doctors Fowler and Arnold, but by Doctors Withering, Willan, and Hamilton, and by many other physicians of distinguished abilities.

It has also succeeded in the hands of some of the members of this college, and with Dr. Wistar in particular; especially where infants or young children have been the subjects of the disease.

Dr. Hamilton has frequently employed a solution of arsenic in water, without the addition of the alkaline salt, and is of opinion that it is equally safe as well as efficacious, provided the solution be carefully filtered through paper to prevent any undissolved particles of arsenic from escaping. In no case that he employed this preparation did he observe that it produced any permanent ill effect, or any temporary inconvenience, except nausea or griping and tenesmus. These by care in the exhibition of the medicine, particularly with the first doses, which were always small, were prevented from becoming troublesome, or in the smallest degree alarming. It is probable, however, that the preparation employed by Dr. Hamilton, from not being united with the alkali, is less steady in its effects, as it is less readily diffusible in a farther quantity of menstruum than when in a saline state.

It is a common practice in the state of Delaware to give powdered arsenic combined with opium in the form of a pill or rolls in doses: to an adult one-sixteenth of a grain of the former, and one-fourth of a grain of the latter, repeated two or three times a day. But from the distressing, and even dangerous effects, which have been observed by different physicians to have followed the too frequent or incautious exhibition of a weak filtered solution of this highly active substance, and from its well

known corrosive effects when applied to the surface of the stomach in an undiluted state, I cannot think it warrantable to exhibit it in that form.

We have the testimony of Sir George Baker, published in the third volume of the transactions of the London college of physicians, that though a medicine composed of arsenic and opium, the dose of which was a very few drops in water, was taken by some people, and sometimes successfully, in the cure of intermittents, violent vomitings and dysentery were now and then the effects of it, and in one case it was followed by a palsy of the lower limbs.

Dr. Clark, in his observations on diseases of long voyages, says, the use of arsenic in fevers sometimes occasions swellings of the face, and other distressing symptoms.

Doctor Girdlestone, in a communication published in the 15th volume of the London Medical and Physical Journal, says, he has had several opportunities of observing sickness, pains of the abdomen, nasal hæmorrhage, cough, icteric symptoms, and dropsy, induced by the incautious or too large doses of Fowler's solution of arsenic. One child lost its nails, hair, and part of its skin, from this solution, which a lady had given to it in improper doses. It occasioned a very great weakness in the bowels of a gentleman who took twenty drops of it three times a day, for more than three months, for a leprous affection, without curing the disorder so soon as may generally be done with much smaller doses.

In my own practice I have seldom employed any of the preparations of arsenic, when the patient could be prevailed on to take the Peruvian bark in sufficient quantity, and it could be retained on the stomach; and when I

have employed it, I have never ventured to prescribe six, eight, or ten drops of Fowler's solution, three times a day to an adult, without regard to the exacerbations of the fever, and from one to four drops to an infant or young child.

As a vehicle to administer it in, Dr. Girdlestone gives the preference to an agreeable spicy decoction or infusion; but I have found children take it more readily in a small draught of sweetened water, and when it has disagreed with the stomach or bowels, which is the only inconvenience I have ever seen produced by it, I have directed it to be given in a draught of cinnamon or peppermint julap, with the addition of from one to five or six drops of laudanum to each dose, according to the age of the patient and severity of the symptoms.

It is often very difficult to determine the credit due to a remedy in a disease which frequently ceases without the use of any medicine whatever, or after the exhibition of such as cannot possibly have any share in the cure, its cessation being apparently occasioned in some instances by a change in the temperature of the atmosphere, a removal of the remote causes, or a suspension of the proximate cause, in consequence of some sudden emotion of the mind. But I have so frequently seen the disease in patients residing in the marshy tract of ground below the city, in seasons when the complaint has been remarkably prevalent, leave the patient so much sooner after the regular use of this remedy for five or six days, than, from the regularity of the recurrence of the paroxysms and the increasing debility of the patient, I had any reason to suppose would have been the case, if left to take its own course, or if treated by any of the remedies in common use, except the Peruvian bark, that I have not

the most distant doubt of the cure being produced by the operation of the arsenic. And notwithstanding the idea of danger which is generally associated with the name of arsenic, I am perfectly satisfied that, with proper caution and due attention to its sensible effects, it may be administered with as much safety as many other medicines in common use, such as corrosive sublimate, sulphate of copper, tartarised antimony, and opium, all of which, in certain doses, are destructive to life. And I am convinced from my own experience, as well as from the testimony of several eminent, impartial and disinterested physicians, that it is a very efficacious remedy in the generality of the cases of regular intermittents, and in those periodical head-aches which occur in the season when intermittents are most prevalent.

Dr. Fowler is of opinion that arsenic is also a valuable remedy in cases of the common autumnal remittent, but as I have never tried it in this form or type of fever, I cannot pretend to say whether his opinion is correct or not; but admitting it to be so, I should not think myself justifiable in prescribing it in any case where the debility and other symptoms indicate great danger, lest from its tendency to occasion sickness, griping and tenesmus, it should increase the debility, and consequently the danger, especially as under such circumstances, the fatal progress of the disease may be generally arrested by injections of bark, the liberal use of wine, and the application and frequent repetition of blisters and sinapisms.

VII.

An account of the MINERALS *of* LOUISIANA, *by Mr.* BRACKENRIDGE. *Communicated to the Editors by* WILLIAM DUANE, *Esq. of Philadelphia.*

IF we denominate parts of the United States by their predominating characters and qualities, this territory may be called *the country of minerals.*

I have not heard that gold has been found in any part of the territory; but it is probable that there are some of the precious metals, and nearly all the useful ones, in great abundance. I have heard an account of a wonderful mass of *platina*, on Black river; this is not sufficiently attested, so as to merit much attention.* It is the prevailing opinion that there is silver, and numerous stories are related respecting it. Geographers have, for a long time,

* The story is related by the Indians and hunters; it has been adjudged *platina* from their description, but if such a thing exists at all, it is most likely some other metal. The weight of the mass is so disproportioned to its size, as to afford a curious deception to the Indians, who have called it a manitou or spirit; it would weigh from their account several tons. I have noticed this circumstance, not with a view of giving it any credit or importance, but merely to shew that such a story prevails

The idea of this wealth in precious metals is certainly flattering: but the experience of Spain affords a salutary lesson, that a people may possess it in the greatest abundance, and be poor in every thing else. The celebrated Adam Smith has very justly observed, that it is *labour* and *industry alone* that give a nation *real wealth.* We should be richer in mines of iron and lead, than in those of gold and silver.

agreed in placing a silver mine on the Arkansas; and, considering the precision with which it is marked on the map, it is surprising to me that some of our enterprising Americans do not avail themselves of it. A hundred places, where there is said to be silver ore, are indicated, from the information of Indians and hunters, on the Mississippi, Arkansas, and the waters of White river.

When we consider the situation of that space between the rocky mountains, the Cordilleras, (which pervade New Mexico) and the rivers Mississippi and Missouri, a conjecture may be formed not altogether unworthy of attention. Silver mines have been discovered north of the Cordilleras, and are worked by the Spaniards. From the resemblance in the character and appearance of the country between these mountains to the Missouri, and the connection of the different ridges which chequer this plain, it seems probable that the same minerals are found; or at least, disappear gradually towards the north and the north east. The volcanic tract, perhaps, is the tract of rich minerals. This conjecture, however, is submitted with diffidence.

With more certainty, I will venture to mark the situation and extent of the mineral tracts, or at least so much of them as traverse the territory. Nearest to the Mississippi, and beginning on White river and the St. Francis, with its main course and diverging branches, about one hundred miles in breadth and six hundred in length, is the tract of lead mineral; certainly the most extensive body of any mineral known in the world. On all the greater rivers that traverse this tract, the mineral shews itself in various places of their channels, and where the soil has been carried off; on the Maramek, the Gasconade, the Osage, the Mine river of the Missouri, the Missouri it-

self, on la riviere des Moines, and at length strikes the Mississippi, at the Ouisconsing. At this place it crosses the river, and is afterwards seen, though not in great abundance, in the places round the Michigan. There is very little doubt but that all this tract abounds with lead mineral, and may afford thousands of the richest mines.

The lead mines at present wrought and productive, are those between the St. Francis and the Maramek, about sixty miles in length and twenty in breadth; and those on the Mississippi, at the Ouisconsing or Prairie du Chien. I reserve the description of the first, for a separate number. The mines of the Prairie du Chien, are still in the lands of the Sacs and the Foxes, and are wrought by themselves exclusively; this is consequently done in a very imperfect manner. During the last year they made six hundred thousand weight, which they disposed of to traders. The principal advantages of these mines are enjoyed by two or three enterprising gentlemen of St. Louis, who have made establishments there; Mr. Abraham Gallatin & Co. and Mr. Forgus Moorehead. Both these gentlemen are natives of the United States, and deserving of much praise for their perseverance and enterprise, in opening this new and advantageous trade. From every account, the Sac mines are the richest that have been yet opened. The Indians are badly provided with tools for mining; a hoe is almost the only instrument which they use. They merely scratch away the soil a few feet, and the mineral, without exaggeration, may be said to be prized up, in the manner of stones in a quarry. The mode of smelting is equally unskilful. The mineral is merely thrown on piles of wood, and afterwards the lead is gathered up in cakes, in the same shapes and forms, as assumed by melted lead, when thrown out upon a

hearth or floor. The lead is remarkably soft. It is afterwards run over by the traders, and made into pigs by the use of moulds.

West of the tract of lead mineral is that of the salines: this tract runs parallel with the other, but goes farther south, and is not so far to the north. It is about the same breadth. This tract affords salines of the best quality, and the most abundant of any part of the United States. The quantities upon the Arkansas and the Osage river are immense. At the salines, on the last river, there are a greater number of the enormous bones of the mammoth* and other animals, at present extinct, than at Big

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* For several miles in extent, and found on the ground, or a few feet under the earth. No collection from these has been made. It is about two hundred miles from St. Louis.

The prevalent system of the present day, the origin of which would seem to have been given by the celebrated anatomist, Cuvier, is that these bones belong to animals of a different creation from the present. They are found all over the world, and of a great variety of species, many resembling those of the present creation, but of much greater magnitude. In South America the skeleton of a sloth as large as that of an elephant, was found and sent to Spain. Cuvier discovered in the vicinity of Paris a number of bones which belonged to animals now extinct. Of the mammoth, four or five distinct species are reckoned. The bones found in the Big Bone lick, prove the existence of a great variety of animals that are no longer on the earth; and of others that we have supposed could not exist in this climate; the bones of the elephant have been found with those of the mammoth in Kentucky.

The traditions, said to have prevailed amongst the Indians on this subject, are easily accounted for by those who are acquainted with the custom amongst those people of inventing and relating amusing tales, like the Arabs. The big bones would naturally furnish a hint. I have heard several on this subject more curious than those that have been recited, as affording evidence of the existence of the animal.

Bone lick, or any other part of America. I have already touched upon the extraordinary body of salt near the Arkansas. The water of this river, for about eight hundred miles from the mouth, is brackish, and persons ascending it are obliged to provide themselves with fresh water from such streams or springs of pure water as put into it. The great body of this salt appears to cross the Arkansas below the falls, seven hundred miles up ; it is there, that the pure salt rock is found, and that the salt prairies are known to exist. Several large streams, strongly impregnated with salt, also enter it about this place. The larger quantities of salt are found in solid cakes in low places which have formed drains or reservoirs for the waters of the higher surrounding ground ; after its evaporation a crust of good salt is left at the bottom congealed like ice. The colour is somewhat yellow, owing perhaps to a slight mixture of clay. Whether this salt is extracted from the earth by the water which covers it, or is deposited in sediment, gathered by the waters in flowing over the soil, before it is collected into these reservoirs, or by what other process these particles of salt are collected and congealed, is a question of some difficulty. Smaller quantities are also found in a pulverized state, and resembling sand ; the Indians gather it with a turkey wing.

I do not mean, by marking off these tracts to convey the idea, that it is only in such parts of the country that certain minerals are found ; but only as their predominating quality, and where those minerals are met with in the greatest abundance. Throughout every part of the territory there are abundance of salines, but not on the great scale of those in the tract which crosses the Arkansas and Osage rivers.

The volcanic tract, may be placed west of the last, and extends to the rocky mountains. It was formely conjectured, from the floating of pumice stone on the Missouri, that some part of the country traversed by this river or its waters, was volcanic; it is now nearly reduced to a certainty. It is the opinion of many intelligent persons who have visited this country. Others are of opinion, however, that the burning of coal banks give rise to these ideas. Near the Mandans smoke is emitted in many places, and by putting down a stick into the fissure from whence it issues, fire is instantly communicated. I think it probable, that on a close examination of the country, evident traces of extinguished volcanoes will be discovered. Mr. List informs me, that about sixty miles from his fort on the Roche Jaune, 170 miles from its mouth, near the junction of a stream that discharges itself into the Roche Jaune, there is a volcano which actually emits flames.

In this tract immense quantities of sulphur can be procured. It is not only found in caves but can be scraped off the prairie in the manner of the salt.

I have spoken of the mineral bodies that are found in the greatest abundance; I shall now mention such as are dispersed through the country in smaller quantities.

Copper is certainly found on the Mississippi, between la riviere des Moines and the Ouisconsing: and several other places in the territory are indicated. There is iron ore on the St. Francis, the Maramek, the Gasconade, and the Osage: great quantities are found on the waters of White river. On the St. Francis, there are huge masses of it like rocks. Many good judges, however, do not think favourably of this ore. Specimens of antimony have been brought in by Indians and hunters, but they have

not been prevailed upon to shew the places where they procured them, though offered very handsome rewards; perhaps owing to their general belief of its being the ore of silver or gold. Mr. Bradbury, in examining the lead mines, discovered, that the miners were throwing away as useless, the *bland ore* of zinc. Coal is found in a variety of places; and there is no doubt, but that abundance of this useful mineral will be discovered, for every necessary purpose, and even for trade. The coal banks lately opened, and worked by Messrs. Baird and Morehead, east of the Mississippi, are not inferior to those of Pittsburgh, and promise an inexhaustible quantity. Nature seems to have showered her gifts upon this country with unparalleled profusion.

Saltpetre has been made on the Gasconade, and there is no doubt, but that great abundance may be had throughout this country, which is generally limestone, and consequently cavernous; in caves from the Missouri to the St. Francis, there are immense quantities of a pure silex, as white as refined sugar, and so much like it, that the difference is not discernible to the eye. I have seen a deception practised to a stranger by giving a lump, and passing it for sugar. It crumbles with the pressure of the fingers: In the manufacture of glass, it will undoubtedly be of importance. A beautiful serpentine, of a red colour, is found between la riviere des Moines and the river St. Peter, of which the Indians make their pipes. It is soft and easily cut into any shape, in the first instance, but soon becomes as hard as marble. A curious circumstance is connected with this, which is noticed by several writers. The Indians of different tribes, no matter how inveterate or fierce their animosities with each other, when they meet here it is always in

peace. At this place of general rendezvous, that most ungovernable of savage propensities, revenge, is completely subdued. This is one of the most extraordinary and interesting facts that is any where related.

There is marble in the territory in various places; it resembles that which is commonly found in Kentucky; but none of the superior quality has yet been discovered. On Bon Homme creek, about fifteen miles from this place, a quarry of stone has been lately opened, which *is said* to equal the French burr. The mill stones procured here are certainly of a superior quality.

Earths and clays, of a rare and useful kind, have been found in different parts of the territory. Gypsum is said to be discovered on the Maramek, and in the district of cape Girardeau, there is a kind of clay that in painting answers the purpose of ochre.

I will conclude this sketch by noticing a curious phenomenon that has been observed, but without attempting any solution, leaving this to the learned. On the St. Francis, and in the White river country, subterraneous explosions have been heard, and their effects seen in several places. The report of the explosion is like that of a cannon or distant thunder, and the earth and rocks appear to be convulsed, as though by the force of gunpowder. The rocks blown up are said to be glazed with a shining matter of a metallic appearance. The fact is well attested.

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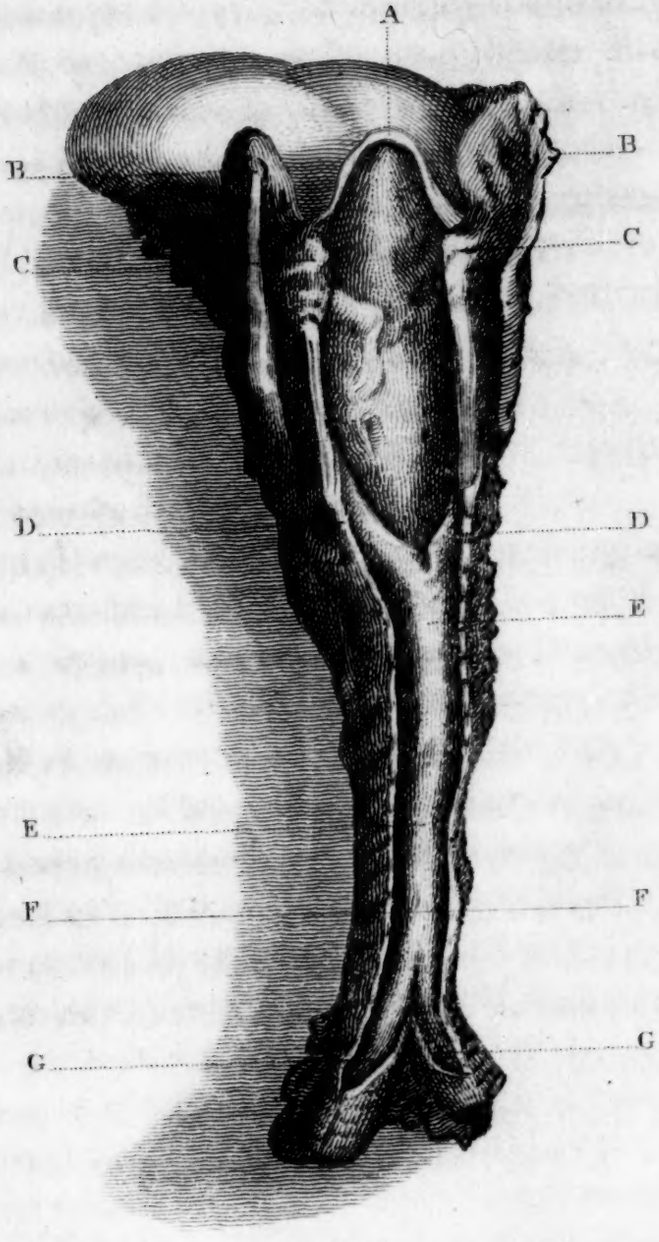

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VIII.

OBSERVATIONS *on* CROUP: *Communicated in a Letter to* ALIRE R. DELILE, M. D. *Physician in Paris, Member of the Institute of Egypt, &c. from* DAVID HOSACK, M. D. *Professor of the Theory and Practice of Physic and Clinical Medicine in the University of New-York.*

New-York, June 28th, 1811.

DEAR SIR,

YOU some time since requested me to communicate to you in writing the observations I had expressed in conversation relative to the nature of Croup, and the mode of treatment which I had found most successful in that disease. I now comply with your request, but shall confine my remarks chiefly to those points in which my views of this subject may differ from those usually met with in medical writings.

The various names under which this disease is described by authors are familiarly known to you.

In common language it also receives different appellations: In Ireland it is called *chock*, or stuffing; in England and Scotland croup; but more usually in this country it receives the name of hives, a corruption of the term heaves, which is probably so called from the heaving or violent efforts of the muscles of the chest and abdomen, which take place in this disease during the process of respiration.

Croup, according to the definition given of it by Dr. Cullen, consists "in an inflammation of the glottis, larynx, or upper part of the trachea, whether it affects the mem-

branes of these parts or the muscles adjoining." In one particular this definition is defective, as the disease is not confined to the upper portion of the trachea, but also most usually extends itself throughout the whole of the windpipe, even into the bronchiæ, and to a degree over the whole surface of the lungs. The effusion of the lymph, or other materials, constituting the membrane, which is the effect of this disease, also very frequently extends into the bronchiæ, though of a less firm texture than that part of it which is found in the upper portion of the trachea. Some preparations in the anatomical museum of Columbia College shew this fact. My colleague, Mr. John Augustine Smith, the professor of anatomy and surgery in the university of New-York, also informs me, that in a case of croup, lately met with by him, in which he was called upon to examine the parts after death, he observed the membrane to extend as far as the bronchiæ could be traced by the knife.

Conversing lately on this subject with Dr. Bard, the president of the college of physicians and surgeons of this city, and who has probably been more conversant with this disease than most practitioners, he informs me, that he has commonly observed in those cases which he has examined after death, that the membrane extended into the bronchiæ as well as the trachea.

The annexed engraving exhibits, in that part of it above the line FF, a correct view of a preparation in the possession of the professor of anatomy in Columbia college, in which the membrane formed in the trachea is preserved in the manner represented. The portion below the line FF represents the same membrane extended into the bronchiæ, as observed by Dr. Bard, who pronounces it to be a correct representation of the fact, as

met with by him upon dissection. To my friend, Mr. Inderwick, I am indebted for the very beautiful drawing from which this engraving has been made.*

Dr. Bard also remarks, that the disease is not even limited to the trachea and bronchiæ, but that the lungs throughout their whole substance, to a certain degree participate in the affection; insomuch that he has seen those organs rendered so dense and solid, that they exhibited in their appearance a great resemblance to the firm and dense structure of the liver, instead of the spongy, loose texture which the lungs naturally present.

The appearances upon dissection, related by Dr. Cheyne in the last edition of his valuable work† on this subject, correspond with the observations made by Dr. Bard: "When the child dies after an illness of four or five days, there is found lining the windpipe a white substance, sometimes of considerable tenacity, varying in thickness, and somewhat in density. It arises at, or a little below the larynx, and is prolonged into the divisions of the trachea: and generally a quantity of a white fluid like purulent matter, with which they are filled, is seen working up from the lungs. The inner coat of the windpipe, to which the membrane is attached, is inflamed.

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* *Explanation of the plate.*

A the epiglottis.
BB the cornua of the thyroid cartilage.
CC the cricoid cartilage divided.
DD the trachea cut open.
EE the membrane formed in the trachea.
FF see above.
GG the membrane extending into the bronchiæ.

† Pathology of the membrane of the larynx and bronchia. By John Cheyne, M. D. Edinburgh, 1809. p. 24, 25.

Generally the inflammation is also discernible along the whole course of the membrane of the bronchia. A serous fluid appears to fill the cells of the interstitial substance. The lungs have a solid feel, from the interstitial effusion, the fullness of the blood-vessels, and the puriform fluid in the bronchial tubes. There is little or no recession of the lungs when the thorax is opened. There are sometimes evident marks of increased vascularity in the pleura pulmonalis. There is serous effusion in the cavity of the thorax and in the pericardium. The cavities of the heart are in general unusually full of blood."

Dr. Cullen very properly observes, that croup may arise, " first in these parts, and continue to subsist in them alone, or it may come to affect these parts from the cynanche tonsillaris or maligna spreading into them." This observation was long since made by Dr. Cullen, and has been abundantly established by the cases and dissections published by Dr. Bard, whose treatise* is referred to in the nosology of Dr. Cullen, under the head of cynanche maligna. Other writers however do not appear to have paid sufficient attention to this distinction.

Some years since I was called in consultation to a case similar to those described in the valuable treatise of Dr. Bard. The disease began with an inflammation of the tonsils, but was soon succeeded by ulceration, attended with fœtid breath and a foul appearance of the parts affected. About the third day the inflammation extended

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* See an Enquiry into the Nature, Cause, and Cure of the Angina Suffocativa, or Sore-throat Distemper: by Samuel Bard, M. D. Professor of Medicine in King's College, New-York. *New-York*, 8vo. 1771.

See also American Philosophical Transactions, vol. 1. p. 388.

into the trachea, producing the laborious respiration and hoarse, hollow-sounding cough which characterize idiopathic croup; in twenty-four hours it proved fatal. The attending physician informed me, that during the first three days the child had not manifested any symptoms denoting croup; but, as in the cases recorded by Dr. Bard, they were probably induced by the inflammation and subsequent acrid secretion extending from the tonsils into the trachea. Since that time I have met with several instances of a similar nature succeeding to malignant sore throat. Other practitioners in this city, who have had frequent opportunities of seeing croup, confirm the observation that this termination of cynanche maligna is not an unfrequent occurrence. Dr. Bard informs me that since the publication of his Essay in 1771 he has frequently observed this disease as the sequela of cynanche maligna. Two cases of croup supervening as an accessory disease in ulcerated sore-throat are also related by Dr. Ferriar in his valuable paper on that subject. "Though there were large ulcerations in the tonsils," he observes, "there was nothing uncommon in the symptoms till the inflammation extended to the trachea, when faint, shrill coughing, hissing respiration, and restlessness came on, which were soon followed by death."*

Croup also, in some instances, is the attendant upon scarlatina. A case of this kind occurred in a child of Mr. Peter P. Goelet, of this city; in that case ulcers of the tonsils, which were attended with considerable inflammation, and an acrid offensive discharge preceded the symptoms of croup: but by the use of emetic medicine the patient was relieved of these alarming symptoms, and

* See Med. Hist. and Reflec. vol. 3. p. 205.

by the use of bark and yeast, which were afterwards administered, both internally and as a gargle, completely restored. In Mr. Cheyne's treatise before referred to, a case of scarlet fever is recorded which proved fatal, in which the membrane was actually formed as in croup, and was removed after death by Doctor Rollo, surgeon of the Woolwich hospital.*

In some instances, especially where ulcerations take place in the larynx, croup also succeeds to *measles*.† In a case related by Dr. Cheyne, it also succeeded to the secondary fever of small pox; and by Dr. Underwood it has been known as the attendant upon the *putrid thrush*.‡ Croup also, says Dr. Cheyne, very often supersedes a common catarrhal affection. In a singular instance, Dr. Ferriar also observes, that he has seen pneumonic inflammation converted into a croup on the tenth day of the disease.§ Dr. Rush remarks, "I have seen it accompany as well as succeed the small pox, measles, scarlet fever, and apthous sore-throat. In the late Dr. Foulke it succeeded acute rheumatism. The late Dr. Sayre informed me he had seen it occur in a case of yellow fever in the year 1798."¶

With these facts before us, therefore, there appears to be just ground for dividing this disease into two species: viz. *idiopathic* and *symptomatic* croup: *idiopathic* where the disease is primarily and exclusively seated in the trachea,

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* See Cheyne, p. 37.

† Ibid. p. 39.

‡ See Diseases of Children, 4th edit. vol. 1. p. 333.

§ Med. Hist. and Reflec. vol. 3. p. 205.

¶ Med. Inq. and Obs. vol. 2. p. 376. 3d edit.

bronchiæ and surface of the lungs ; *symptomatic*, where it is the consequence of other previous diseases.

It is asserted by some writers, but denied by others, that cynanche trachealis is an *infectious* disease.

As the cynanche maligna and scarlatina are communicated by contagion or infection, doubtless they may also be so in their consequences ; and in this way croup may be transferred by those diseases as the vehicle of communication. The cases related by Von Rosenstein,* in evidence of the infectious nature of croup, were probably cases of cynanche maligna, similar to those described by Dr. Bard. We hence see the propriety of Dr. Cheyne's observation, that " when a physician has to visit more children than one, with a croupy affection, in a family or neighbourhood, he ought carefully to examine the state of *the fauces*."† But that idiopathic cynanche trachealis is infectious, I believe there can be no ground for supposing. I should as readily believe that an inflammation of the brain or of the pleura should be thus communicated, as an inflammation of the membrane lining the trachea ; and I believe it may be safely asserted that the fact is otherwise. In the numerous families in which I have prescribed for this disease, I have never known it to be thus communicated, either to the attendants upon the sick, or to other children, even though sleeping in the same room, and frequently in the same bed ; but I have more than once been called in the same night to two children of the same family, both having been exposed to the same cause, and especially where there is a great predisposition to attacks of this disease, as is the case in particular families.

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* See Von Rosenstein on the Diseases of Children, translated by Sparmann.

† Page 19.

It also happens that when a child has suffered one attack of croup, it becomes liable afterwards to repeated returns of the same complaint, and that too upon the application of much slighter causes than had induced the first invasion. The same observation, you know, is made of pleurisy, sore-throat, rheumatism, and most inflammatory complaints. I am credibly informed of a lady who has suffered twenty-one attacks of pleurisy. How much more susceptible of impressions is the sensible membrane lining the trachea, especially during infancy? But happily as this sensibility diminishes by age, the returns of the disease become less frequent, and when children arrive at the tenth year, it is comparatively of rare occurrence.

I have never visited a child upward of twelve years of age in this complaint, except where it had suffered previous attacks of it; yet in some instances, as before remarked, adults are the subjects of this disease. In the winter of 1809, I was called out of bed to a lady who had lately removed to this city from the state of Virginia. She went to bed in perfect health; she was awakened by coughing, attended with pain, and a sense of burning in her throat. These symptoms were soon followed by difficult, hoarse, and laboured respiration; her husband became very much alarmed, and called upon me between twelve and one o'clock: I found her in great distress, coughing almost incessantly, every inspiration being attended with the peculiar noise of croup. Her cough was dry, accompanied with the usual deep hollow sound, that characterizes this disease in infancy. I immediately bled her freely from the arm, gave her an antimonial emetic, and applied a blister to the throat. I also left directions, that if the difficulty of breathing should continue, to take a dose of calomel and James' powder,

composed of five grains each, every two hours, and to dilute freely with warm toast-water, herb-tea, or barley-water, which are the drinks I usually direct in this disease. By these means she was relieved in a few hours. I was also in like manner called upon about three years ago to another lady attacked in a very similar manner, and who was relieved by the same means that have been enumerated in the former case.

During the year in which I resided in Virginia, in 1790–1, I visited, in the neighbourhood of Alexandria, a man dying with every symptom characteristic of this disease. Dr. Mitchill, the professor of natural history in the university of this state, suffered a severe attack of croup in the spring of 1801, during his attendance at Washington as a member of congress. The interesting history of his case is subjoined. But there is an instance of this disease attacking the adult which can never be forgotten, as it deprived our country and the world of one of their most illustrious citizens, George Washington, late President of the United States.

Most writers have followed Mr. Home, in representing the disease as more particularly confined to maritime situations; but it is now well ascertained, that although croup is of most frequent occurrence on the sea coast, where the air is loaded with moisture, and the changes of weather are most sensibly experienced, that it is still oftentimes met with in the interior of the country. The publications of Dr. Rush and Dr. Currie,* of Philadelphia, Dr. Stearns, of the county of Albany, in the state

* Currie's View of the Diseases most prevalent in the United States of America, at different seasons of the year, with an Account of the most approved Method of treating them, &c.

of New-York, and Dr. Archer, of Maryland, afford evidence of this fact, for they have described the disease as it appears in places very distant from the sea. Dr. Cullen observes, that it is met with in inland countries as well as on the coast. Most usually it is ascribed to cold as its exciting cause. It is true it is frequently produced during the severe cold of winter; but as far as I have noted its occurrence, it appears most frequently upon the approach of winter, and in the spring. I have also observed, that during severe blowing and stormy weather the cases of it are most numerous. During the summer season it is also produced by the same cause. I have frequently traced an attack of croup to the imprudent exposure of a child to the night air after a hot day, or to a stream of air to which it had been exposed in a hall or window.

This disease is described by Dr. Cullen, and by most practical writers, as consisting in an inflammation of the secreting membrane lining the trachea. But Dr. Millar,* Dr. Underwood, Mr. Field,† and Dr. Archer, of Maryland, describe two species of croup; one *inflammatory*, another, which they denominate *spasmodic* croup. You well know, by your residence with me as a pupil of medicine, that it is a disease of very frequent occurrence in this city; yet, although I have been eighteen years a practitioner of medicine, and in that time have prescribed for many patients in this disease, I have never met with a single instance in which it assumed the spasmodic character, described by those gentlemen, unaccompanied by symptoms of local inflammation.

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* Millar on Asthma and Hooping-cough.

† Edinburgh Practice of Physic, vol. 1. p. 355.

Dr. Bard, whose practice has been more extensive than that of any other physician of this city, informs me, that from the year 1762 to the present time, he has never met with a case of croup that was not attended with symptoms of inflammation. Dr. Scott, of New-Brunswick, who has practised medicine with great reputation in the state of New-Jersey, for about fifty years, makes a similar observation. It is true that this disease attacks the patient very suddenly, and that in its commencement the affection of the throat is frequently without pain, and is attended with very little fever, even during the first two or three hours after the attack ; while the cough, peculiar noise, and labour of respiration which characterize croup, are very considerable, and to the friends acquainted with the nature of the disease, and apprised of its dangerous consequences, very alarming. Most usually, however, in those cases in which the child is old enough to express its sensations, there is a sense of pricking, burning, or irritation in the windpipe, sufficient to denote the seat of the disease ; and such is the sensibility of the windpipe to the impressions made upon that delicate organ, that the local affection, as in the first attack of pleurisy, is out of all proportion to the general febrile excitement of the system ; for neither the pulse or heat of skin are much affected during the first two or three hours of the disease. These facts, and the sudden relief which the patient sometimes obtains from the means prescribed during the first stage of the complaint, have, perhaps, led the authors mentioned to consider croup as, in some cases, a spasmodic disease of the windpipe : sometimes, too, especially when occurring in a delicate habit of body, the use of the common domestic remedies, viz. warm bathing and warm drinks, are sufficient, by the relaxation they induce in the

system, to restore the suppressed excretions, and thereby to remove the irritation from the part affected. But notwithstanding this happy termination, it does not follow that the disease is only spasmodic, and not inflammatory; for we frequently see catarrh, and sometimes even incipient pleurisy, by all acknowledged to be diseases exclusively of an inflammatory nature, removed without having recourse to the more active remedies usually resorted to: but unhappily this disease generally attacks children of the most robust habit of body, and if not immediately arrested, terminates in violent inflammation, accompanied with fever, which are only to be removed by the most prompt and decisive practice. In cases of this sort, to trust to the prescriptions ordinarily directed for the removal of the most violent spasmodic affections, is to do nothing; it is worse than nothing; for while the physician temporises, the child perishes. Many lives, I believe with Dr. Ferriar, "have been sacrificed to the imaginary powers of assafœtida, or small repeated doses of antimonials, from unfounded theories of spasmodic constriction attending the disease."*

Dr. Cullen observes, that the antiphlogistic regimen is necessary in every stage of the disease, and that he has not found antispasmodic medicines of any use. It is, therefore, most safe for us to consider with Dr. Rush, that all the varieties which this disease assumes, "are the effects of a difference only in its force or in its duration," and, to continue to use the language of that accurate clinical observer, that "they all depend upon one remote and one proximate cause." It also fortunately happens, that

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* Med. Hist. and Reflec. vol. 3. p. 210.

the practice which is found most effectual in inflammatory croup, is not opposed to that which would be indicated if the disease were exclusively spasmodic; on the contrary, the remedies found most useful in counteracting inflammation, are also among the most powerful antispasmodics. This leads me to add some further remarks on the

TREATMENT OF CROUP.

Writers upon this subject differ as widely as they do about the nature or character of the disease; but none, in my opinion, appear to have sufficiently discriminated between the different stages, in which the remedies they severally recommend ought to be employed; even Dr. Cheyne's late valuable work, and which contains the best pathology of this disease, is in some degree defective in this respect. I have been led at the bed side to distinguish *three* distinct stages in croup: the first may be denominated the *forming stage* of the disease; in this the affection is local; the irritation has not yet extended to the whole system; the child even sits laughing and playing upon the lap of its mother, manifesting a very unusual but morbid degree of exhilaration; its skin is cool and moist, its pulse not perceptibly accelerated; but its hoarse, hollow sounding, and frequently returning cough, its wheezing inspiration, its restlessness, and especially its cries after a fit of coughing, all denote to the physician and parent acquainted with the disease, the consequences that will soon ensue, if active means be not employed to prevent the *second*, or *febrile stage*. In this stage the whole system partakes of the irritation; the pulse is frequent, the skin hot and dry, the respiration hurried, the tongue covered with the usual white fur indicative of inflamma-

tion, the lips and cheeks remarkably florid, the cough frequent, but attended with a more acute sound than that of the first stage; every inspiration too is attended with more uniform wheezing than that which appears in the first, when occasionally an interval occurs in which the child breathes as if in health. But in this second stage no such interval is perceived; the trachea, bronchiæ and lungs become so surcharged by the circulating fluids, that the child has not even a momentary relief from its oppression; and in a short time, if left to itself, especially if the patient be plethoric, the countenance exhibits a purple, livid colour, not unlike that of apoplexy, and is even attended with a degree of stupor, or propensity to sleep. This loaded state of the lungs and interruption to the free return of blood from the head I have frequently witnessed in this stage of croup: if the patient be now neglected, or the evacuations be sparing and insufficient, an effusion from the exhalent vessels opening into the windpipe, bronchiæ, and surface of the lungs, inevitably takes place. In the two former, the effused matter assumes a membranous appearance, probably owing to the forcible passing and repassing of the air through those preternaturally constricted tubes; but in the lungs themselves it appears in the form of a viscid fluid, partly resembling both phlegm and pus. When this effusion has actually taken place, the febrile symptoms sensibly abate, and sometimes disappear altogether; the child is also apparently free from pain, but it suffers violent paroxysms of cough and difficult breathing, attended with an irregular and spasmodic respiration, as in asthma, or dropsy of the chest, and with similar intervals of ease. These paroxysms, in young children, continue but a few hours before dissolution. But in children arrived at eight or ten years of age, they

frequently continue several days. A daughter of Gen. Morton, whom I saw in consultation, continued to struggle with those painful paroxysms at least four or five days after the febrile stage had terminated, and the effusion of matter, constituting the membrane, was supposed to have taken place. In some cases the impediment to inspiration, and the distress attending the paroxysms are so great, that the only position in which the patient can respire, is with the head thrown back. In this situation the trachea is extended, and thereby its capacity increased, and adapted to the membrane which it encloses. In some instances before death, general convulsions ensue, which speedily terminate the sufferings of the patient. This stage, in which the membranous effusion takes place, I denominate the *membranous*, or *purulent stage:* from this advanced state of the disease recovery is so rare, that it is not to be expected; it might almost be denominated the *fatal* stage of croup. These distinctions it is, in my opinion, important for the practitioner to keep in view, as they lead to important conclusions in practice.

They teach us during the first or forming stage of this disease to adopt the most active means of restoring the suppressed secretions of the trachea and surface of the lungs, and by open bowels and perspiration to guard against the general excitement of the system. For this purpose, when called to a patient labouring under the first symptoms in which the disease appears to be confined to the parts primarily affected, it is my practice to administer an emetic composed of tartarized antimony and ipecacuanha: to a child under two years of age I direct from one to two grains of the emetic tartar, with from

five to ten grains of ipecacuanha every fifteen minutes, until it operates to such a degree as to induce a plentiful secretion from the trachea and lungs. It is surprising, in some instances in this disease, to see the immense quantity of viscid, ropy phlegm discharged by the operation of an active emetic at this period of the complaint; but when this discharge has been accomplished, and the cough has become loose, which is an evidence of the natural secretion being restored upon the surface of the parts affected, we may, in most cases, consider the patient secure from danger.

It is usual with many physicians, upon these occasions, to administer large quantities of warm water to the patient, under the operation of an emetic: this practice, in my opinion, by washing the medicine out of the stomach, and diluting it, diminishes the nausea and general relaxation which it otherwise produces, and upon which its beneficial effects in a great degree depend. When the emetic has no other effect than to produce vomiting, I immediately direct the bowels to be emptied by the common domestic injection, and a dose of calomel from five to ten grains to be given, unless the child may be completely relieved; for it frequently happens that an emetic alone, by restoring the excretions from the windpipe and lungs, and the other evacuations by perspiration and stool which it creates, affords immediate relief, especially if the physician be called early in the disease.

The same result is thus noticed by Dr. Rush, in his excellent practical remarks on cynanche trachealis:

"In the forming state of this disease, which may be easily known by a hoarseness, and a slight degree of stertorous cough, a puke of antimonial wine, tartar emetic,

ipecacuanha, or oxymel of squills,* is for the most part an immediate cure. To be effectual, it should operate four or five times. Happily children are seldom injured by a little excess in the operation of this class of medicines. I have prevented the formation of this disease many hundred times, and frequently in my own family, by means of this remedy."†

But it too frequently happens, that many of the common family prescriptions are in the first instance employed, and much valuable time lost before the physician is called upon; in that case, if the febrile symptoms have already manifested themselves, other remedies are indicated. In this second stage of croup, such is the determination of the circulating fluids to the part affected, and such the general febrile excitement of the system, that the most efficient means of diminishing the plethora of the blood vessels, and of diverting the irritation from the part affected, become necessary. With this view, the patient should be bled freely, in proportion to its age and powers of constitution; say for a child under two years, from two to four ounces; from two to six years, from four to six or eight ounces, and to be repeated as the urgency of the symptoms may require. Most writers recommend the blood to be taken from the jugular veins: as I have never, even in the youngest children, experi-

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* As the operation of the squills is very much limited to the stomach, and does not produce the same general relaxing effects upon the whole system that are produced by antimony and ipecacuanha, and having frequently been altogether disappointed in the emetic effects of it, I have totally abandoned the use of this medicine in the first stages of this disease.

† See Med. Inq. and Obs. vol. 2. p. 377. 3d edit. 1809. Philad.

enced any difficulty in opening a vein upon the back of the hand, and of drawing a sufficient quantity of blood from that part, especially after immersing the hand a short time in warm water, I have never had occasion to open a vein in the neck; and as the child is generally very restless in this disease, and there is on this account more hazard in opening one of the jugular veins than those on the back of the hand, I have uniformly preferred the latter. It is also preferable on other accounts: it is difficult to ascertain the quantity of blood drawn from the jugular; the vein cannot be so readily closed, and the orifice is apt to open afresh by a violent fit of coughing. I confess I read with surprise the observation of Dr. Cheyne, that it is difficult to procure a sufficient quantity of blood from any other than the jugular vein. Dr. Ferriar makes a similar remark, "that in the case of very young children, we must almost despair, for it is extremely difficult to procure any blood from them by the lancet." These difficulties I have never experienced; the vein on the back of the hand, even in children six weeks old, being always perceptible to the finger, if not to the eye.

Although I am not an advocate for small bleedings in croup, let me here take occasion to express my disapprobation of the practice of some physicians, especially that recommended by the late Dr. Bayley, of this city, Dr. Ferriar, of Manchester, and Dr. Dick, of Alexandria;* I mean that of bleeding the patient until fainting be induced. The relaxing effects of blood-letting upon the system are no doubt desirable in this complaint, and were probably the objects which the advocates of this mode of treatment had in view; but having ob-

* See 3d Supplement to Dr. Barton's Med. and Physical Journal, for May, 1809. p. 242.

served in some instances, very serious and permanent evils to the constitution, occasioned by the debility which this profuse evacuation had produced, and knowing that even the most violent attacks of croup will yield to a less excessive evacuation by the lancet, when conjoined with other remedies, I have hitherto objected to this practice in the extent it has been recommended. After blood-letting generally some partial relief is immediately obtained; respiration is less frequent; the peculiar noise of inspiration is also diminished; the cough becomes more loose and yielding; the skin is rendered moist, and the pulse less tense and frequent. But these favourable symptoms are oftentimes deceptive, and of short duration: the cough, laboured respiration, and heat of skin, are perhaps all renewed in the course of an hour. In that case the antimonial emetic must be immediately employed. Although the force of the disease may have been greatly subdued by blood-letting, the alarming symptoms so frequently return that I am now in the constant practice of prescribing the emetic immediately after blood-letting has been performed, without waiting to ascertain the effects which the bleeding alone might produce; if, however, after the operation of the emetic, the symptoms still continue violent, I usually repeat the bleeding, immerse the patient in a warm bath, apply a large blister to the throat covering the larynx and trachea, and administer a cathartic of calomel, from five to ten grains,* repeat-

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* Such is the efficacy of calomel in the treatment of croup, that some practitioners place their chief dependence upon it in every stage of this disease, even in its most violent forms. Dr. Stearns, of Albany, a physician of great reputation, and who is said to have been singularly successful in the cure of croup, prescribes it in connec-

ing this medicine every two hours, until it produces some sensible effect in this respect, at the same time soliciting its operation upon the bowels by injections occasionally administered.

These several remedies having been employed, and having failed completely to subdue the febrile symptoms, and to divert the irritation from the trachea and lungs, I next direct small doses of calomel and James' powder, from two to five grains of each, to be given every two hours to a child under four years of age; but when sufficient evacuation from the bowels may have been procured, I frequently prescribe the antimonial wine, or a solution of tartar emetic, in such doses as to excite a considerable degree of nausea and relaxation; with these I occasionally blend a small portion of laudanum, where it may be indicated either in consequence of the profuse evacuation by the bowels, or

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tion with the cerated glass of antimony, at the same time administering a decoction of the seneka snake-root, (*polygala senega*): for a child of a year old, when the disease has assumed its most alarming symptoms, he directs 20 grs. of calomel with 8 grs. of the cerated glass of antimony; for a child of two years of age, the dose is increased to 25 or 30 grs. of calomel, with a proportionate increase of antimony. This combination, Dr. Stearns observes, generally operates two or three times as an emetic, and as often by stool; but if the disorder continues after the operation of this dose, he gives the decoction of seneka, and at the expiration of every eight hours repeats the dose of the calomel and antimony, until the cure is complete. In common cases he remarks, that one dose is sufficient, and that he has never found it necessary to give more than four. Dr. Stearns, considering croup to arise from a torpor in the absorbents of the trachea, and not primarily an inflammatory affection, disapproves of bloodletting, "as a very hazardous remedy, and which ought never to be prescribed in simple cases of croup."*

* See Coxe's Med. Museum, vol. 5. p. 195.

when the cough may be very harassing to the patient, which is sometimes the case when the febrile symptoms are greatly moderated; in other respects laudanum should be administered with great caution in this disease.

The physician is sometimes called upon at a late period of the disease, where the means which have been described have not been employed; or if they have been, may not have succeeded, and in which the third stage of the disease has become apparent. Respiration, as in the two preceding stages, is still laborious, accompanied with the same wheezing noise upon every inspiration; the cough also continues violent, without the least expectoration, and returns in paroxysms, in which the patient is threatened with immediate suffocation; the countenance exhibits a blueish livid appearance, at the same time that the patient manifests the greatest anxiety and distress; occasionally, however, it has intervals of ease, in which its sufferings are apparently inconsiderable; but these intervals are of short duration, and afford no prospect of relief, for the effusion before mentioned, and the consequent formation of a membranous matter lining the trachea and bronchiæ, has already taken place. In this stage of the disease, it has occasionally happened that portions of the membrane have been thrown off by coughing, by which the patient has happily been preserved. Two cases of this kind are related by Dr. Home, (p. 53. 54.) which have induced him to hope that "art, though not in the way of internal medicine, may attempt effectuating the same end."

But although nearly fifty years have elapsed since the publication of Dr. Home's treatise, in which this suggestion is contained, we do not learn that in a single well authenticated case the operation of opening the trachea has been successfully performed; and when we recollect what has al-

ready been stated, that the disease is not limited to the trachea, that the inflammation and effusion of matter are spread over the greater part of the surface of the lungs, that the membrane itself frequently extends below the division of the trachea, the inference is plain that even if the membrane alone could be detached, it would still be doubtful how far the disease would be removed by the operation. In one case related by Dr. Home, " part of the membrane was thrown up, yet the patient died." (p. 53.) But although it were certain that the membrane was confined to the trachea alone, such must be the difficulty of detaching it from its connection, and such the embarrassments, from the restlessness of the child, the constant movement of the larynx in respiration, the discharge of blood, &c. that must necessarily attend an operation of this sort, that I should be inclined to rest the whole hopes of relief, even in this advanced stage of the disease, upon the use of internal medicines.

Calomel, in small but repeated doses, squills, the syrup of onions, the seneka snake-root, ammoniac, and assafœtida, and the vapour of vinegar and water, are the medicines upon which I am inclined to place most reliance at this advanced period of croup. As they are a class of remedies calculated to excite the secretion from the lungs, without impairing the general powers of the system, they afford, if steadily persisted in, the best means of loosening and of ejecting the membranous matter, as well as the fluid materials effused over the surface of the lungs.

The following case, related by Dr. Rush, of the good effects of calomel in the advanced stage of croup, should incite us to the diligent use of this remedy, even after the effusion of the matter constituting the membrane has been

ascertained to have taken place. The doctor observes, "I once attended a man from Virginia of the name of Bampfield, who, after an attack of this disease, was much distressed with the stertorous breathing and cough, which belong to it; I suspected both to arise from a membrane formed by inflammation in his trachea. This membrane I supposed to be in part detached from the trachea, from the rattling noise which attended his breathing. He had used many remedies for it to no purpose. I advised a salivation, which in less than three weeks perfectly cured him."*

But these stimulant remedies, excepting calomel, the use of which, in the first stages of croup, has already been noticed, should, in my opinion, be confined to the third stage of this disease. Many families in this city, and some physicians too, are in habits of prescribing the syrup of onions in all stages of croup, without discrimination. So powerful a stimulant cannot certainly be administered with safety where blood-letting and other means of reducing the increased excitement of the system are indicated. Dr. Archer, of Maryland, has rendered an important service to medicine by introducing into general use the polygala senega, as a remedy in croup. Hitherto, however, it has certainly disappointed the expectations of most practitioners, because it has been prescribed indiscriminately in every stage of the disease; whereas, for the very reason that it is so useful in exciting the vessels of the trachea and lungs to a powerful excretion of the materials oppressing them in the last stage of croup, it is certainly a hazardous prescription when those

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* Med. Inq. and Obs. vol. 2. p. 380.

organs are preternaturally excited, as they are both in the forming and febrile stages of this disease. Lest you may not have seen Dr. Archer's treatise, I subjoin his formula for preparing and administering this medicine: he observes,

"The decoction of the root is the manner in which I have generally seen it used; the strength must be determined by the physician: it must be so strong, as to act sensibly on his own fauces, in exciting coughing, &c. Half an ounce of the root of seneka, bruised and simmered in a close vessel in half a pint of water, until reduced to four ounces, will probably in most cases be sufficiently strong. A teaspoonful of this to be given every half hour or hour, as the urgency of the symptoms may demand; and during these intervals a few drops occasionally, to keep up a sensible action of the medicine in the fauces, until it acts as an emetic or cathartic; then repeated in small quantities, and so frequently, as to keep up a constant stimulus in the mouth and throat." (p. 33, 34.) "The powder," he adds, "has lately been used in doses of four or five grains, mixed in a little water, with effects equally pleasing as the decoction."

For the same reason that stimulant remedies are thus indicated, blood-letting, emetics, the warm bath, and such other medicines as relax and debilitate the system, and which were indicated during the two first stages, ought in this to be prohibited; for in this debilitated state of the system they not only diminish the power of secretion, but of ejecting the matter secreted. If circumstances, however, should indicate an emetic in this stage of the disease, and the decoction of seneka should prove insufficient, the sulphate of zinc or copper is certainly preferable to that of antimony or ipecacuanha, the former be-

ing less debilitating, while they afford all the advantage which can be obtained from the mechanical operation of vomiting, and which is all that can be desired at this advanced period of the disease; at this time it is also necessary to sustain the strength of the patient by more nutritious food than is proper in the first stages; a cup of sago, arrow root, chicken soup, or weak wine whey, are now indicated; but the latter should be carefully abstained from during the inflammatory stages of this disease, when the patient should be confined to such drinks and nourishment as are least calculated to excite the system. Seeing then, that so little remains to be done in this third stage of croup, we are taught the importance of very active treatment during the first and second stages of this disease.

As you have had an opportunity, during the prosecution of your medical studies in this city, of witnessing the practice I have recommended, you can bear testimony to its success in those cases in which advice is called for in the commencement of the disease. Candour, however, obliges me to acknowledge, that in the course of my practice I have lost two patients in this complaint: the one in the month of September, 1797, a child of Mr. Nexsen; the other, in April, 1808, a child of Mr. Herman Hendricks of this city. Generally speaking, I consider croup in its early stage as much under the controul of the remedies which have been enumerated, as a pleurisy or any other inflammatory disease. But as Dr. Ferriar justly remarks, "if the alarming symptoms are not mitigated during the first six hours, the disease will generally prove fatal."*

* Med. Hist. and Reflec. vol. 3. p. 203.

If the view I have taken of this interesting subject may have any claims to your attention, or be found of importance in the treatment of croup, it will afford me pleasure that I have endeavoured to comply with your request.

I am, Dear Sir, with great regard,
Yours, &c.
DAVID HOSACK.

Dr. DELILE.

Dr. Mitchill's description of his own Case of Croup.

New-York, August 23, 1810.

DEAR SIR,

IN answer to the queries proposed in your letter of the 20th instant, concerning the occurrence of croup in adult persons, I offer you a brief account of my own case. I regret that some notice of it, in the newspapers of the day, cannot now be found.

In the spring of the year 1801 I suffered a violent attack of a disease in the trachea, which I have no hesitation to call croup. I am not conscious of any particular exposure or accident that brought it on. Its commencement was more like catarrh than any other disorder. In its progress, there was an extraordinary secretion of slime. Very little of this came from the pharynx, fauces, or posterior nares. It proceeded from the glottis, larynx, and trachea. Scarcely any portion of it was secreted below the entrance of the latter into the thorax. The quantity was excessive. It might almost be imagined that all the fluids of my body had rushed, with one onset, to these parts. The toughness of the phlegm rendered it very difficult for me to dislodge it. There was in it a

manifest tendency to thicken and concrete. This disposition might have been increased by absorption and evaporation.

Though the mucus of this tenacious quality was so profusely poured out, there was no great irritation in the parts which it inundated. By this I mean, that I was not under any necessity to cough constantly. Had there been no other evacuation than that arising from the *involuntary* action of the diseased organ, I must very soon have been suffocated. The fluids would have accumulated and thickened, and eventually it might have been impossible for me to have cleared away the adhesive and inspissated mass.

The exercise of my will, alone, saved me from a stoppage of my breathing. Knowing the consequences of a stagnation and concretion of the fluids in the windpipe, I exerted myself, with all my powers, to keep the passage open. My efforts to hawk were exceedingly laborious, and almost incessant. The quantity voided by spitting was enormous. By calling into action all the muscles over which I had any volition, I promoted the discharge. I have no doubt that by practice I acquired the power of making the muscles co-operate more exactly in dislodging the secretion; and I aided the internal voluntary efforts by the application of my fingers to the outside of the assailed parts; by a well directed pressure, the mucus adhering to the inside of the trachea and larynx was brought more within the current of the expelled air, and was in greater quantity expelled with it. I withheld an epispastic, because I thought it would interrupt the use of the laryngeal muscles, and at the same time prevent the employment of my fingers. I am the more inclined to suppose my disease the croup, inasmuch as I had no soreness

nor swelling of my throat, nor was I sensible either of the chills or heats of a fever; my lungs were not oppressed with inflammatory action, and my breathing, as far as the moving powers of the chest and the action of the lungs themselves were concerned, was performed as freely as ever.

The remedies which I employed in so formidable a disease were few. I had the aid of cathartics; I rigidly abstained from all manner of food and drink, until my symptoms abated. I was bled once from the arm by my friend, Dr. V. Seaman. But my principal dependance was placed on the excretion of the overflowing humors, under the direction of my will; and, without this, I do not know how I could have lived many hours. Had an infant, a child, or any person unable to have cleared the larynx, been seized as rudely as I was, death must have ensued, after a series of symptoms which almost every practitioner would have ascribed to cynanche trachealis. This disease has a name more significant and appropriate than usual; for it is really, as its generic and specific terms import, a malady "*which* kills by strangling, or intercepting the passage of the air to and from the lungs through the windpipe." The reason therefore is apparent wherefore grown persons are not more frequently the victims of croup. They relieve themselves by hawking and spitting, and partly also by coughing and raising; and if infants and children could detach the tenacious fluids in the same way, there would be fewer instances of mortality among them. This is fully confirmed by the recoveries which happen in consequence of sometimes dislodging the secreted substance, even after it has acquired the firmness of a membrane.

It appears to me from the observations I have made on croup, that adults have no exemption from it; they suf-

fer the disease more frequently than is generally supposed; but among this class of patients the fatal termination is more rare, on account of their ability to extricate from the trachea its morbid lining. Notwithstanding which, there occurs now and then a case, wherein, from a want probably of expectorating power, the croup destroys even adults. Hence we understand how the disease, which in an individual of tender age might be croup, is in a person of advanced years generally denominated a cold, and confounded with the diversified forms of catarrh.

This sentiment I had entertained from my own observations and sufferings, before you suggested to me that it had been countenanced by Michaelis. Though I remember that gentleman, I had no recollection of the passage in his dissertation on the membranous or polypose angina, which ascribes the greater *fatality* of the croup in children to their inability to throw off the secreted fluid, and attributes greater *frequency* of it to adults than is generally believed, the latter excreting it before it forms a film or membrane.

This disease, as it occurs in children, and progresses from bad to worse, through all its stages, presents, as you know, a most afflicting spectacle. I shall never forget the incipient hoarseness, the sonorous wheezing, the playful intervals, the distressful croaking, the suffocating anguish, and the premature death of Robert, the fifth son of my most excellent mother, who, at the age of five years, was overpowered by the accumulation of fluids in the trachea, too viscid for him to bring up.

Wishing you success in your investigation, I remain, with much esteem and regard, your's,

SAM. L. MITCHILL.

To Dr. DAVID HOSACK.

REVIEW.

ART. I. *An* ESSAY *on the Varieties of Complexion and Figure in the* HUMAN SPECIES: *by the Rev.* SAMUEL STANHOPE SMITH, D. D. L. L. D. *President of the College of New-Jersey, and Fellow of the American Philosophical Society, &c. &c.* 2d edit. J. Simpson and Co. New-Brunswick, S. Whiting and Co. New-York. 1810.

THE learned author of this essay submitted to the public a disquisition on this subject, held before the American Philosophical Society, in Philadelphia, in the year 1787. This work was well received both in Europe and America, and an edition of it was published in Great Britain, with additional notes, which is quoted with great respect by the editors of the British Encyclopedia. The present work contains a more extensive elucidation of the same principles, supporting them by a more ample collection of facts, drawn from the general history of the human species, and, in many instances, from the physiology of other animal natures. This we think, has been accomplished in a manner that must prove satisfactory to every genuine lover of physical truth. Our first conclusions, on a superficial inspection of nations who differ most widely from one another, both in corporeal and mental attributes, would probably be unfavourable to the idea of the unity of the human species. But when we recollect the various changes which the animal, as well as the vegetable tribes, are seen to undergo by the influence of climate, soil, and culture, we perceive

the propriety of subjecting the question to a new and more deliberate examination.

The author, before proceeding directly to the illustration of the physical and moral causes, from the operation of which he derives the principal varieties of mankind, makes some preliminary observations in order to strengthen, by speculative probabilities, the practical argument from fact by which he afterwards confirms the unity of the species. "Different species," says he, "must be subject to different laws, both in the physical and the moral constitution of their nature. The whole philosophy of man, therefore, is confounded by that hypothesis which divides the *kind* into various *species* radically different from one another. The laws of morals, designed to regulate the mutual intercourse of mankind, we derive from examining our own nature, or collecting the common sentiments of men in society, united together by a common system of feelings and ideas. But how shall we apply rules derived from these sources to different nations, and to different individuals whose moral principles, resulting, in like manner, from the constitution of their natures respectively, may be as various as their several aspects? *Varieties* may be created in the same species, either in the animal or vegetable kingdom, by varying their culture, and sometimes, by transferring them to a different soil or climate: but to all such varieties, where there is no radical diversity of *kind*, the same general laws will apply. To man, in like manner, may be applied the same general principles of moral and physical action, if it be ascertained that, amidst all their differences, there exists only one original species. But, destroy this unity, and no certain and universal principles of human nature remain." *Essay*, p. 11, 12.

The author, in the next place, very reasonably demands of those who maintain that there are different species of men, to point out their distinctive properties. "By what criterion," he asks, "shall we distinguish them? What is their number? Where do they now exist pure and unmixed? Philosophers," he remarks, "have never been able to give to these questions such precise and definite solutions as are sufficient to satisfy an inquisitive and discriminating mind." p. 12, 13. To assume the existence of different species, therefore, he justly concludes to be contrary to the principles of true science.

Dr. Smith next combats the doctrine of the primeval and absolute savagism of all the tribes of mankind. This opinion, which is generally connected with the denial of the identity of the human species, was, probably, derived to the philosophers from the Grecian poets, the primitive masters of western science, who took their type of the first men from the aboriginal savages of their own country. It was the natural offspring of that contingent, fatal, or physical origin from heat and moisture, which they ascribed to the human race, as well as to other animal natures. President Smith maintains that this absolute and deplorable state of savagism, of which there is no example among the rudest tribes of the earth, is not only contrary to the most authentic monuments that remain to us of ancient history; but is hardly to be reconciled with the present existence of the arts, as we see them established in civilized nations, or even the existence of man. Many of the reflections on this subject will recommend themselves to the reader by their originality, not less than by their justice.

"All the earliest monuments of nations, as far as we can trace them, fix their origin about the middle regions of Asia, and present man to us in a state already civilized. From

this center we perceive the radiations of the race gradually shooting themselves towards every quarter of the globe." p. 16, 17. But on the supposition of that state of savagism described by the philosophers and poets just mentioned, and which, if we reject the ideas of revelation, is the only real picture of man sprung from the recent earth by accident, or by the necessary laws of physical attraction and combination, Dr. Smith continues, "Hardly is it possible that *such* a man, placed on the surface of the new world, in the midst of its forests and its marshes, capable of reason indeed, but without having formed any principles to direct its exercise, should have been able to preserve his existence." p. 17. "Nature has furnished the inferior animals with many and powerful instincts to direct them in the choice of their food, and with natural instruments peculiarly adapted to enable them, either by climbing the forest tree for its fruits, or by digging in the earth for nutritious roots, to obtain it in sufficient quantities for the sustenance of life; but man, destitute of the nice and accurate instincts of other animals, as well as of the effectual means which they possess of procuring their provision, must have been the most forlorn of all creatures, although destined to be lord of the creation, unless we suppose him, like the primitive man of the sacred scriptures, placed in a rich garden, which offered him, at hand, its abundant and spontaneous fruits. Cast out, an orphan of nature, naked and helpless, into the savage forest, he must have perished before he could have learned how to supply his most immediate wants." p. 18. Again, "Reason, the supreme prerogative of our nature, and its chief distinction from that of the inferior animals, could have availed him little in that emergency. It would have required, in order to its exercise, a knowledge

of principles and of the nature of the objects around him, which could have been the result only of time, and a certain degree of experience. In the mean time, that recent mass of organized matter, called a man, would probably have perished." p. 19. Here the doctor draws a proper contrast between this helpless being and the savage tribes with which we are acquainted, and particularly the aboriginals of America, who have inherited by tradition a knowledge of all the most necessary arts for the sustenance of human life in their rude condition. He next proceeds to argue, with great plausibility of reasoning, that, from such an origin given to the human race, or rather, to those indefinite species of men implied in the foregoing supposition, never could have sprung the liberal or the useful arts, as we see them now existing in civilized nations.

"If we can believe that, in this deplorable condition, they could have found means to sustain life, man, originally a savage, and a savage in the most abject state in which it is possible for human nature to exist, must have remained a savage forever. Urged by the most pressing wants of nature, for which all his exertions, undirected by skill, and unassisted by the natural arms which other creatures possess, could have furnished but a scanty supply, and which therefore, would have never ceased one moment to harrass him; he would not have enjoyed leisure to invent any of those arts which enter into the first elements of civilized life. An importunate appetite, with brutal impulse, would have so continually precipitated him from object to object, in order to gratify its cravings, that he could have redeemed no portion of his time for contemplating the powers of nature, or for combining his observations in such a manner, as to apply those powers in ingenious inventions for anticipating his wants, or for facilitating their supply. If he could indulge a moment's repose from the importunity of hunger, it would be to resign the next moment to absolute inaction, like a satiated beast in his den. The character of a savage is infinitely improvident. Nothing he abhors so much as labour when he is not under the immediate impulse of some imperious appetite, or passion." p. 21, 22.

The indolent and contented genius of savagism, the doctor asserts, sinks in profound stupor every desire after improvement: it obstinately resists every effort to introduce from abroad those useful arts which require either labour or reflection. The American savage possesses many advantages, derived from a remote ancestry, above that primitive man whom we are contemplating, yet hardly has the example or influence of the most cultivated nations in the world, been able, during three centuries, to induce him to advance a single step in the amelioration of his state.

"If such (continues the learned President) is the genius and character of savagism, as it appears in the aboriginal tribes of America, how much farther removed from the first elements of civilization must have been those primitive species of men contemplated by this hypothesis.

Qui prorepsèrunt primis animalia terris
Mutum et turpe pecus, glandem atque cubilia propter
Unguibus et pugnis pugnantia?

Compared with such beings the American indian may be considered as an artist and a sage. Compared with their hands the only instruments afforded them by nature to dig into the earth for a miserable subsistence, the bow and the hook may be regarded as high and noble inventions. By such men, impelled by incessant and importunate wants, in which they could enjoy no leisure for meditation, no composure for reflection, and brutalized in all their faculties and tastes, it would have been impossible that one principle of science should ever have been discovered, or one liberal art ever have been invented. The existence of civilized society in the world is a proof that man was never in such an abject state. Besides, uncivilized man is a lazy, improvident, and filthy animal. If he has food for the present day, nothing is able to rouse him to industry. Contented, and even pleased with filth, because in that state he feels himself more at ease, for even the attentions of cleanliness are a constraint to a savage, he feels no motive to desire any accommodation beyond what he is compelled by necessity to seek. Men, with such dispositions, will be forever stationary. Nothing but the controling influence of some civilized power, could even induce a savage to wield a spade,

or guide a plough. And all the ages of time would not be sufficient to teach him to separate from the ore, and to prepare, the metal from which those instruments are made." p. 25, 26, 27.

But lastly, his argument against those writers who, denying the identity of the human race, would derive their unknown and innumerable species from certain "*equivocal power of generation*, resulting from the united action of moisture and heat on the primitive mass of the world, not yet perfectly redeemed from chaos, nor drained of its waters," appears to be decisive. "On the supposition of this power of *equivocal generation*, if, indeed, it had any support in the order of nature, these philosophers might find, in the slime of the recent earth, as many species of men, as there are of insects generated, according to their philosophy, from the same cause in a stagnant morass. But, can the patrons of this extraordinary system explain the reason why nature has never made but one such effort? Why have we never, since that first generative act, found in the most extensive morasses, even in the torrid zone, one newly formed man; nor even one limb, or outline of a man, just shooting from the moistened and heated earth, like crystals in a chemical process? Have not moisture and heat, and all the other elements of nature, the same properties still which they possessed in the beginning?" p. 30.

The author having gone through his preliminary observations concerning the identity of the race, concludes with this just remark:

"It is contrary to the laws of true philosophy to resort to the hypothesis of different original species of men, in order to explain varieties which can otherwise be accounted for from the known operation of natural causes. And if we can find, in the laws of nature, powers sufficient to impress on the ground of the same original constitution of man, all the varieties of complexion and form which have

distinguished the race in different climes and states of society, it is a homage which we owe to philosophy, as well as to religion, to refer all the different nations of the earth to the same original stock. It is a debt which we owe to humanity to recognize our brethren in every class of men into which society is divided, and under every shade of complexion which diversifies their various tribes, from the equator to the poles."

When Dr. Smith comes to enter more directly on his principal subject, the general causes of the varieties which subsist among different portions of the human species, he reduces them to the heads of *Climate ; the state of Society ;* and *the Manner of living.* p. 35.

And first, with regard to Climate : " In tracing (says he) the various climates of the globe, advancing from the arctic circle to the equator, we find them marked, with considerable regularity, by the colour of the inhabitants. The same distance from the sun, however, does not, in every region, indicate the same temperature. Besides the latitude, many secondary causes are to be taken into consideration to determine the character of the climate." p. 37. Of these, perhaps the principal are the elevation or depression of the country, the nature of the soil, the vicinity and position of mountains or seas, and many other states of the land and water which serve to impregnate the atmosphere with various gases, salubrious or unhealthy, which are illustrated in the essay at considerable extent. The influence of the sun, in affecting the complexion, is rendered obvious by the changes produced in a delicate skin in the winter and the summer, when exposed to it without covering, in the hands of sea-faring men, and labouri[illegible] people, and in men who make any permanent change of climate from north to south.

" We see even in our own climate, that the solar rays are able to penetrate the entire substance of the skin ; and when it is first exposed to

them without covering, they dissolve its texture inflaming it, and raising it into blisters. This action of the sun tends not only to change its colour, but to incrassate its substance, till it becomes thick enough to resist any further alteration from their influence; when it assumes a hue, more or less dark, according to the power and continuance of the cause. The complexion of the African zone, therefore, in the greater portion of which the inhabitants are both savage in their manners and almost universally destitute of clothing, will naturally be as much deeper as the ardor of the sun, in those parched regions, is both more constant and intense than in the temperate latitudes, or even in other districts of the torrid zone." p. 50.

But Dr. Smith finds in the secretion of the bile in the human body, which is greatly augmented by extreme heat, by putrid miasmata in the atmosphere, by poverty of diet, excessive hardships and other causes, an agent not less powerful than this solar influence, in producing the dark colours of southern and savage nations.

On the immediate causes of colour, therefore, in mankind, he proceeds to state the following concatenation of facts and observations:

"1. The rays of the sun, when suffered to act immediately on the human skin, tend to produce a dark colour, although there should be no uncommon redundancy of bile in the constitution.

"2. On the other hand, redundancy of bile imparts a dark hue to the complexion of persons who have not, in any uocommon degree, been exposed to the direct action of the sun. Accordingly, we frequently see those who have been long affected, in different degrees, by an excess of this secretion, contract a hue resembling that of various dark coloured nations. [Of this, various examples are produced from different writers, and, among others, from Dr. Blumenbach, who observes, that the liver, the great laboratory of bile in the human constitution, is peculiarly affected by the temperature of tropical, and all very hot climates, and other causes naturally connected with these; and that there is a very great sympathy between the liver and the skin, both the one and the other being among the principal means provided by nature for purifying the mass of the blood.]

"3. Where both causes co-operate, as is the case in all fervid climates, the effect upon the complexion of the inhabitants must be greater in proportion to the influence of the respective causes.

"4. The human skin has been discovered by anatomists to consist of three distinct lamellæ, or integuments: the external, or scarf-skin, which is an extremely fine netting, and perfectly transparent in the darkest coloured nations; the interior, or true skin, which, in people of all the different grades of colour, is white; and an intermediate membrane, which is cellular, in its structure, somewhat like a honey-comb. This membrane is the proper seat of colour, being filled with a delicate mucus, or viscid liquor, which easily receives the lively tinge of the blood, when strongly propelled, by any cause, to the surface, or the duller stain of the bile, when it enters in any undue quantity into the circulation. The smallest surcharge of this secretion imparts to it a yellow appearance, which, by remaining long in contact with the atmosphere, assumes a darker hue, and, if exposed, at the same time, to the immediate influence of the sun, approaches, according to the heat of the climate, and the degree in which the bile prevails, towards black.

"5. The gall or bile of any animal, exposed to the sun and air, in a short time becomes black: a phenomenon which probably results from the great proportion of carbon which enters into its composition, and the evaporation which takes place in the open air of the hydrogen, or aqueous fluid with which it had been combined and diluted.

"6. When from any cause, therefore, the bilious secretion has been increased beyond its natural proportion, approaching the surface of the body, in the progress of the circulation, the carbonic matter of its composition becomes there attached to the viscid mucous in the cellular membrane of the skin, while the more thin and volatile hydrogen, with which it is combined, having a stronger affinity and attraction with the oxygen of the atmosphere, and flying off first, leaves it precipitated and entangled in those cells, where it stains and discolours the complexion.

"7. The bile itself is, perhaps, more liable than most other secretions in the human body, to become incrassated and mucous: at least, it is always copiously found in that state in the stomach and intestines of those persons who have been long subject to bilious disorders.

"8. The vapours arising from stagnant waters, with which uncultivated regions abound, great fatigues and hardships, poverty of diet, filthiness in the manner of living, tend, likewise, to create a surcharge of the bilious secretion. Hence, as well as from their nakedness and exposure to the unmitigated effect of the solar and atmospheric influence, savages will always be discoloured even in temperate or in cold climates, &c.

"9. Those who make great and sudden changes from northern to southern climates, are usually attacked by bilious disorders, which leave the blood impoverished, and shed a dark colour, tinged with a yellow appearance, over the skin. These disorders, proceeding from the climate, are probably only the efforts of nature in removing that tension of the system, which would render it liable to dangerous inflammatory fevers, and imparting to it that proportion of bile which is requisite to its safety, and its comfortable subsistence in its new situation." p. 52—60. [Here it is shewn that a certain proportion of bile, producing what is called a *bilious habit*, renders the constitution more tolerant of extreme heat.]

Dr. Smith, after having laid down these general principles on the causes of colour in the human species, proceeds to confirm his observations by a series of known and interesting facts. In the first place, by the regularity of what he calls *the complexional zones of the world*, which are marked by the gradual change of complexion as we descend from the higher temperate latitudes towards the equator; subject, however, to a variety of modifications, arising from the various combinations of heat and moisture, with other causes which are known to affect the temperature of the atmosphere, and the health and state of the body. Secondly, by the changes which are known to have passed on the same nation on being removed into different climates: which have been exemplified particularly in the Tartar tribes who have been transferred to Persia, or India; and in the Jews, who are infinitely diversified in their appearance, according to the climate in which

they are found. And finally, by alterations in physiognomy and corporeal habit, which have taken place in the descendants of European colonists removed to America.

These subjects are treated with considerable minuteness and particularity; and, in our apprehension, with great perspicuity and justness of induction: to which are added several observations on the influence of climate on the colour of the inferior animals. p. 60—80.

The author proceeds to illustrate other varieties by which different portions of the race are distinguished. Among these the colour and form of the hair are among the most striking and obvious. "The colour of the hair," says the doctor, "generally follows the law of the complexion; because its roots, being planted in the skin, derive its nourishment and its colour from the same secretion, which there contributes principally to form the tint of that various covering of the body. Every gradation of shade in the skin is usually accompanied with some correspondent shades in the hair." p. 81. Many remarks follow on the fineness, density, and colour of this excrescence in different nations, well worthy the attention of the observer of nature. p. 81—88.

"That form of the hair which principally attracts our attention is the sparse, coarse, involved substance, like wool, which covers the head of the tropical African." Take the following specimen of the author's reasoning upon this subject:

"The sparseness and coarseness of the African hair, or wool, is analogous to effects which we have already seen to be produced by the temperature of arid climates upon other animals. Its involution may be occasioned, in part, by the excessive heat of a vertical sun, acting upon sands which glow with an ardor unknown in any other quarter of the globe. But probably it is occasioned chiefly by the pe-

culiar quality of the secretion by which it is nourished. That the curl or nap of the hair depends in a great degree on this cause, is rendered the more probable by the appearance which it exhibits on the chin, over the armpits, and other parts of the human body. Whatever be the nutriment of the hair, it would seem, by the strong and offensive smell of the African negro, to be combined in him with some gas or fluid of a very volatile and ardent nature. The evaporation of such a gas, rendering the surface dry and disposed to contract, while the center continues distended, tends necessarily to produce an involution of the hair." p. 89, 90.

This train of reflection he endeavours to confirm from an opinion of Blumenbach, that *there is a strong sympathy between the liver, the laboratory of the bile, and the skin: and, as the influence of the climate upon the secreting powers of the former is very great, it is proportionally great on the action of the minute vessels of the latter, by which that matter is supplied to the reticular membrane, which becomes there the nutriment of the hair, and according to the qualities of this nutriment will the hair be affected in its colour and other properties.* With regard to the qualities of this nutriment, Dr. Smith adds, " certain volatile and saline secretions tend to curl the hair. Viscid and glutinous matters produce a like effect. The strong smell of the negro, however, seems to indicate the union of sulphur with hydrogen gas, or inflammable air, and perhaps with an unusual proportion of phosphorus." The offensive fetor of the African blacks, the doctor asserts, is diminished in their descendents in America; and, in the same degree, the close nap of their wool is beginning to be relaxed. These opinions and reasonings seem to receive decisive confirmation from the striking and unquestionable fact of a black man in the state of Maryland, who, some years ago, lost his black complexion, which was changed into a clear and healthy white; not a sickly and

Albino colour, but resembling that of an Anglo-American. As soon as the white complexion of the skin extended itself beneath the woolly substance on the head of this man, the wool disappeared, and was replaced by straight and soft hair. p. 90—95. This fact, which occurred to the doctor's own inspection, is preserved also in other respectable repositories and journals in this country. Several remarks are added on the heat of the climate and the savage manners of the people, as contributing to increase the effect, which are not unworthy the attention of the philosopher. p. 95—99.

The extreme of cold, as well as of heat, has a powerful influence on the human body; affecting its stature, the form of its limbs, and the features of the countenance.

These effects, especially as they are exhibited in the northern tribes of Asia and America, are traced with great particularity, and we think with accuracy and truth, in this essay, from page 100 to 110. When the author proceeds to assign the physical influences which concur in the production of the African countenance, he discovers equal nicety of observation. p. 111—117. In coincidence with a remark made by Mr. Volney on the same subject, he says, that "the countenance of the negroes represents precisely the state of contraction which our faces assume when strongly affected by heat, the eye brows are knit, the cheeks rise, the eye lids are drawn together, and the mouth pouts out. This state of contraction, to which the features are constantly exposed in the hot climates of the negroes, is become the peculiar characteristic of their countenance." To these the doctor might have added one cause of the wideness of the nostril, and consequent flatness of the feature of the nose in that race of men, which, though not less obvious than many other minute

causes which have been justly touched by him, he appears to have omitted. In the extreme and suffocating heats which prevail in those regions, nature prompts to distend the nostrils in order to inhale as large a stream of air as possible. In this effort they are very much spread out at the sides, which induces a stricture across the cartilage of the nose that contributes to depress it, till it assumes that shape and aperture, which best corresponds with the necessities of the climate. At this point it would become fixed in the original inhabitants of that continent, and become the hereditary characteristic of the negro visage. This is the more probable, when we consider the wonderful effects which are often produced by the gentlest strictures, or pressures on particular parts of the human body, commenced from the tenderest state of the muscles, bones, or cartilages, and continued through life.

Many writers, who acknowledge that the soft and fleshy parts of the system are susceptible of great changes by the influences of climate, contend, that the bones, being infinitely more firm in their texture, and less liable to the impressions of external causes, contain more certain indications of diversity of species among different tribes. The arguments drawn from this source appear to us to have received a very satisfactory answer in the Essay. p. 120—122. But some of the doctor's remarks on the form of the skull are so original, as well as just, that we are induced to present them to the reader in his own words. After observing, that, in infancy and youth, before the bones have attained their firmest consistency, these solid substances are susceptible of considerable alterations in their figure from the operation of very minute causes, he proceeds:

"On the figure of the head particularly, besides the climatical influences, or the extraneous accidents to which it may be exposed, every action of every muscle affected, in any way, by the thoughts and passions of the mind, is calculated to make some impression. And although the separate impressions may be insensible, yet the accumulated result of an infinite number of the slightest touches becomes very perceptible in a long course of time. Nor is the softness of muscular action a sufficient objection against the reality of this fact. What can be softer in its action than a drop of water falling from the height of a few inches? Yet in time it will wear a cavity in the hardest marble. What can be more tender than the young herb just sprouting from the seed? Yet, although the earth that covers it may be pressed down and beaten hard, we see it, by the gentle impulses of its expanding fibres, and circulating juices, gradually swell, and, at length, break through the incumbent crust. Shall we deny, then, that the passions, which often strongly agitate the mind, nay, that each emotion, each thought, by affecting the muscles which give expression to the countenance, and varying their tension, and, consequently, their pressure on different parts of the bony base of the head, may also affect its figure? From these and similar facts, some great physiologists have imagined that the figure of the skull, with its various protuberances and indentations, affords a certain criterion by which to judge of the intellectual powers and moral dispositions of men.

"On this subject we may, perhaps, be justified in affirming, that the various strictures and relaxations of the muscles about the head, produced by the infinitely diversified actions of thought and passion, will, in time, leave certain impressions affecting the exterior form of the skull. At the same time, the brain, the immediate organ of all the emotions of the soul, will, by its dilations and contractions, contribute, in some degree, to mould the interior cavity in which it is embraced. On the other hand, the original figure of this receptacle of the brain, in different men, by giving it scope, in some, for a more ample expansion, and a freer action; or, in others, by compressing it in some parts of its orb, and thereby restricting the regularity or freedom of its motions, may affect the operations of the mind, and thus lay a foundation, in the organization and structure of the head, for the existence and display of particular intellectual or moral excellencies or defects. The original figure of the skull, therefore, may have an influence, not inconsiderable, on the developement and exercise of

certain passions and affections of the mind, and on its peculiar powers of intellect or imagination; and, on the contrary, the habitual exercise of these powers, or indulgence of these passions, especially in the early periods of life, may reciprocally affect the figure even of that solid cell in which the brain, the immediate organ of the mental actions, is contained.

"From the preceding observations, if they are founded in nature and fact, we are fairly entitled to infer, that some climates, and some states of society and modes of living, by varying, in a less or greater degree, the form of the head, that organ which, by its figure, necessarily affects the operations of thought, are more or less favourable than others to certain exertions of the mental powers. And we may infer, further, that after a people have long cultivated science and the arts with success, or devoted themselves chiefly to certain occupations and pursuits, a greater general aptitude for those pursuits, or those arts, may become hereditary among their descendants, till other causes arise to change their manners." p. 122—126.

The author afterwards demonstrates by the example of several nations, that the same people, in consequence of changing their national seats, have, either by the force of the new climate, or by the gradual influence of new manners and habits of living, materially changed, not only their complexion and system of features, but the form of the head, and their whole person. He points out the artificial means which are employed by several tribes to vary the form of their children; and the effects of the early habits of the nation in some tribes, and the carelessness of nursing and attendance upon children in their infantile state. These, with the detection of many false relations of negligent or prejudiced travellers, occupy the principal portion of the Essay, from the 128th to the 148th page.

The author next proceeds to point out the various effects of different states of society and habits of living, in diversifying the aspect of mankind. The influence of these causes is exhibited with great variety of illustration,

which will probably be still more interesting to the great mass of readers, than the subjects treated of in the former part, which are more remote from common observation. But the train, variety, and extent of this part of the work, would render a satisfactory analysis of it too diffusive to be conveniently embraced within the limits of the Register. We find, in the first place, the injurious influences of savage life, and the favourable effects of civilized habits and manners, upon the complexion and figure of the human race, pursued with great minuteness of investigation, and exhibited in the various grades in which they respectively exist, and the characters which they assume, in the different tribes of men, and regions of the world. p. 150—162. These are confirmed and elucidated by the various aspects which men exhibit in the different classes into which society is divided, and in the great diversity which is found to subsist between the domestic and the field slaves in the southern states of America. p. 163—170. Some remarks are also made on the change of countenance observed on a young Indian in the college of New-Jersey, which will be found to possess very considerable interest; as well as others, on the alterations that have taken place on Anglo-Americans, who have been taken captive in early life by the savages. p. 170—176.

"Under the head of the *state of society* (says Dr. Smith) are comprehended diet, clothing, lodging, manners, government, arts, religion, agricultural improvements, commercial pursuits, habits of thinking, and ideas of all kinds naturally arising out of this state, infinite in number and variety. If each of these causes be admitted to possess, as undoubtedly it does, a small influence in forming the character of the countenance, the different combinations and results of the whole must necessarily be great, and, united with the effects of climate, will

afford sufficient principles on which to account for all the varieties that exist among mankind." p. 176, 177.

"Another cause, he observes, of the varieties arising out of the state of society, [a cause, we must remark, which has been little taken notice of by any other writer,] will be found in the power which men possess over themselves of producing considerable changes in their figure and appearance, according to any standard of beauty in the human person which they may have framed. Each nation differs from others, in many respects, in its ideas of personal beauty. Whatever be the standard which any people have formed to themselves, there is a general effort to attain, and it is pursued with more or less ardor and success, in proportion to the advantages which men possess in society, and to the estimation in which beauty is held."

"Of its effect in creating distinctions among nations in which different ideas of personal beauty prevail, and different means are employed to reach them, we may frame some conception from the differences which take place in the same nation, in which similar ideas exist, and similar means are used to form the person, only in various degrees. What a difference between the soft and elegant tints of complexion generally seen in women who move in the higher circles of society, and the coarse ruddiness of the vulgar; between the uncouth features and unpliant limbs of an unpolished rustic, and the complacency of countenance, the graceful figure, and easy air and movement of persons in cultivated life; between the shaped and meaning face of a well bred lady, and the soft and plump simplicity of a country girl! We now easily account for these varieties which have become familiar to the eye, because we see the operation of their causes. But if we should find an entire nation distinguished by a composition of features resembling the one, and another by the contrary, they would have as fair a title to be ranked under different species by certain philosophers as the German and the Tartar." p. 177—179.

Dr. Smith then remarks that the means employed by our own countrymen to form their persons after this ideal model, are, through the influence of custom, often little observed; but the means used by other nations, who aim at a different idea, attracting more attention by their novelty, will serve better to illustrate the influence of the principle.

Thence he proceeds to point out the various means which are employed by different nations, to form particular features according to their own peculiar notions of beauty. p. 179—190.

Some reflections are made, in the next place, on the influence of the state of society on the mental powers of nations, and their correspondent physiognomy, which well merit the attention of those who would thoroughly investigate the principles of human nature. p. 191—194.

The whole expression and physiognomy of savage life, especially as it is exhibited in the aboriginals of America, is, finally, presented to us, and forms a subject of curious speculation. p. 195—205.

The Essay is concluded with a very particular and, we think, satisfactory answer to the objections which seem to lie against the principles maintained in it, from the variety of complexion and aspect discovered in different regions of the torrid zone; and especially from that mixture of nations found to exist in India, and the numerous islands of the great Indian and Southern oceans. In this part of the work are many observations on the population of those islands, and on the original settlements of the American continent, which, to the greater part of readers, will be both novel and interesting. p. 206—245.

The remainder of the volume is filled up, first, with strictures on the disquisitions of Mr. Charles White, held before the philosophical society of Manchester, in England, on the anatomy of the African negro, endeavouring to demonstrate *a diversity of species between him and the man of Europe.* To which are added some remarks on the arguments of Mr. Jefferson, tending to prove the *natural inferiority of the intellect of negroes to that of the whites.*

To both these writers we think Dr. Smith has given decisive answers.

In the next place, he has given strictures on that part of Lord Kaimes' *history of man*, intended to bring in doubt the *identity of the human species*. His lordship's argument is, in these strictures, clearly and completely set aside.

Dr. Smith concludes his work with an historical and philosophical disquisition on the military character of the aboriginal tribes of North America, in answer to those writers who have imputed to them a pusillanimity, insensibility, and inhuman cruelty, which, in the opinion of these philosophers, discriminate them from other species of mankind. The *philosophy* of the Indian character, in these particulars, which have been imputed to them as the greatest reproach, will be found to contain much original observation; its history is built upon facts which have been long and generally known in America, though never before so distinctly narrated.

Upon taking our leave of the present volume, we shall only add, that, notwithstanding the various opinions which have been maintained on the several subjects of which it treats, Dr. Smith, in our opinion, has decided the question relative to the unity of the human species, and has permanently secured to himself a distinguished rank in the number of those who have nobly and successfully exerted themselves in illustrating the connection which subsists between genuine philosophy and revelation.

ART. II. *The Modern Practice of* PHYSIC, *&c. &c. by* ROBERT THOMAS, M. D. *With an* APPENDIX, *by* EDWARD MILLER, M. D. *Professor of the Practice of Physic in the University of New-York.* New-York. Collins and Perkins. 8vo. pp. 697. 1811.

ABOUT five years ago, Dr. Miller framed an elaborate report on the yellow fever of 1805, in which, it is understood, the whole strength of the doctrine of non-contagion was, for the first time, disclosed, and all its numerous arguments concentrated. This report was first published in a pamphlet form, and addressed to the governor of the state; next it was ushered to the world through the medium of one of our daily prints; it came forth a third time in the Edinburgh Medical Journal; and since that time the doctor has revised and improved it, and it is now again sent forth, in the shape of an Appendix to Dr. Thomas' Practice of Physic, with the view to remove all remaining medical heresy on the subject of contagion.

With Dr. Thomas' work we shall not, at this time, concern ourselves. The slight examination, which, only, we have been able to bestow upon it, leads us readily to coincide in the opinion expressed by Dr. Miller in the introduction to his appendix, that "it is executed with a degree of ability and judgment which reflects much honour on the talents of the author." It is also added, that "in Great Britain it stands so high in public estimation as to have passed through several editions within a short period." So popular a work then afforded the doctor an excellent opportunity of giving currency to the tenets held by the advocates for the domestic origin of

yellow fever, and a co-extensive circulation of his own performance on that subject. We must however observe, that this method of seizing upon a branch of a particular subject, occupying less than two pages in a volume of seven hundred, and making it serve as a pretext for annexing to the work a heavy appendix, containing many gratuitous assertions, on which are founded doctrines and arguments in their support, in direct opposition to those entertained and expressed by the author himself, is a new method of giving currency to one's own opinions, by compelling another's assistance who holds them in abhorrence. The volume before us is thus so far perverted from the author's intentions, as that hereafter it is to circulate the mischievous doctrine of domestic origin, notwithstanding the author has taken some pains to manifest his reprobation of it. Let it be observed, that the appendix is not an answer to any thing advanced in the volume to which it is subjoined, but an independent, abstract essay, very improperly attached to the labours of one who dissents totally from all it contains. If this is encouraged, we shall next find Chisholm himself, by means of an artful appendix, become an advocate for the doctrine of domestic origin. How Dr. Miller can reconcile this treatment of Dr. Thomas with propriety, delicacy, and fair dealing, we shall leave to himself.

Considering the appendix in the important point of view before mentioned, our object is to subject the facts and arguments advanced in it to an impartial scrutiny.

Dr. Miller begins by "deprecating all personalities whenever the principles of science, especially of medical science, are undertaken to be examined." "Whatever regards the health and safety of mankind (he now seems to think) is too grave a subject to become the sport of

passion, or the vehicle of invective and personality." We cannot too highly commend these sentiments, and have only to regret, on his own account, that they had never occurred to him before. During the thirteen years in which he has been employed in compiling and publishing the Medical Repository, what adversary has ever escaped those personalities here so much deprecated. If he has forgotten himself, we refer the doctor to his former volumes and hexades for the truth of this remark. Let him turn to the articles containing reviews of Haygarth and of Chisholm, as well as of those American writers who have had the misfortune to differ from him in opinion, and he will there see how freely he and his coadjutor have been accustomed to deal in the haughty rebuke, bitter sarcasm, or the taunting irony. And they were left to enjoy their triumph in silence; for there was no rival work in which the injured could make their defence. But as we are now assured that all personalities will henceforth be discarded, we congratulate Dr. Miller on the resolution he has adopted, and sincerely rejoice at the information.

Dr. Miller divides his subject into various heads, under the form of questions; the first of which is,

"What are the causes and nature of the *yellow fever?*" This malignant disease (he says) has never been known to prevail except in tropical climates, or in those seasons of the more temperate climates in which the atmospheric heat has for some length of time been equal to the tropical heat, that is, at or about eighty degrees of Fahreinheit's thermometer." "There is no instance in the United States or in Europe of an epidemic yellow fever, except at these degrees of heat, nor of its long continuance after the atmosphere has been reduced to a much lower degree of temperature." "The primary and essential cause of the yellow fever is a *miasma* or *pernicious* exhalation floating in the atmosphere." "In order to produce these miasma, it is necessary that there should be a concurrence of heat, moisture, and a quantity of decaying animal and vegetable matter. It is therefore exhaled

by heat from low and moist grounds, overspread with the offals of animal and vegetable substances, from such substances collected in large masses, from any place where the process of putrefaction is going on to a considerable extent." "This exhalation is uniformly more frequent and virulent in sea port towns, in situations along sea coasts, in plains or near rivers, lakes, marshes, and swamps, or wherever stagnant waters are found, than in the interior high and mountainous districts of the country."

Such is Dr. Miller's theory as to what he calls the "*primary and essential* cause of yellow fever." To this, however, must be added, he says, "certain *secondary* or exciting causes," which are, "exposure to heat, fatigue, cold, dampness, intemperance, fear, anxiety," &c. We mean not to employ our time in opposing hypothesis to hypothesis, which, in the end, is generally found to terminate without satisfaction to either party concerned, and least of all that of the reader; but we mean to come, at once, to plain matter of fact, and on that alone we shall rely. We shall oppose facts to theory, and so long as we find ourselves armed with the former, we shall hold ourselves invulnerable, though Dr. Miller should continue to build speculation upon speculation, and to imagine cases to support them without end. To this test, then, let us now subject the foregoing extract.

Those who have lived in this city for the last ten years, and have taken notice of the different times and seasons when, and places where, the yellow fever has broken out and prevailed, on both sides the East-river, sometimes in New-York, sometimes at the Wallabout or Brooklyn, will find it extremely difficult to comprehend how any one of these local causes, or all of them united, can embrace these different seasons and places, and satisfactorily account for what has appeared in them all. Is it not well known, that during the above period it has at one time prevailed

in New-York, and not at the Wallabout; at another, at the Wallabout, and not in New-York; a third time, in New-York, and not at Brooklyn; and a fourth time, at Brooklyn, and not in New-York? Now, as these villages are only about a mile distant from each other, and as New-York is separated from them only by a river of about eight hundred yards in its width, it is manifest that the "tropical heat" is about the same at one place as at another, and therefore climate cannot be allowed any agency in producing the disease. But Dr. Miller mentions this heat as being essential to produce that "pernicious exhalation which floats in the atmosphere," and is the "primary cause of the yellow fever." But he says there must be a "concurrence of heat, moisture, and a quantity of decaying animal and vegetable matter." From the above, we repeat, it is apparent that the degress of both heat and moisture of atmosphere must be nearly the same at the same time in all the different places mentioned. Nothing then remains to enquire after but the doctor's "decaying animal and vegetable matter." We shall not be contradicted by any one who recollects facts, or will turn to the publications of the times, that when the yellow fever broke out at the Wallabout, in 1804, it was proved by the undeniable testimony of several witnesses, delivered under the solemnities of an oath, that the place was liable to no imputation of any one of Dr. Miller's enumerated causes, nor of uncleanliness of any sort. The Wallabout is a small hamlet, consisting of about twenty dwelling houses only, erected at suitable distances from each other, and then contained a number of ship-carpenters, all of whom were well accommodated: far from being situated in "low and moist grounds," it stands upon the hard, gravelly and sandy bottom which forms the shore of the

river; nor is there a foot of *made ground* in the place. In short, there was not the shadow of a pretence for supposing, any where near it, the doctor's "decaying animal and vegetable matter."

We are not forgetful that a long and particular statement of facts, totally different from this account, came out in the Medical Repository; and when the truth was afterwards made to appear incontestibly, we cannot conceal that we experienced a degree of indignation, that the editors should have never taken the least notice of it, but shewed themselves so utterly destitute of that candour and magnanimity, which readily acknowledges error, and hastens to correct it, as to persist in propagating false statements wherever their book obtains circulation. What, permit us to ask, what must the public think, what ought it to think, of a literary work which propagates important mistatements of material facts, and when it is afterwards convicted of so doing, instead of retracting, never permits the corrections to find their way into the work? Is not such conduct an injury to the cause of truth, and an imposition on the community?

While the yellow fever was raging at the Wallabout with a degree of malignity and mortality, as great in proportion to the number of the inhabitants, as perhaps ever was known, New-York remained entirely exempt. Such also was the fact, when the yellow fever prevailed at Brooklyn two years since; but concerning this we stated the case so fully in a former number, that it is quite unnecessary to re-examine it here. In a word, the disease has prevailed alternately in each of the three places, alone, all lying in the same latitude, and subject substantially to the same local causes. A single fact affords a simple, satisfactory solution of every difficulty. *While the ship-*

ping were permitted to come along side our wharves, the yellow fever prevailed in New-York; but since 1805, *that is, since they have not been allowed to approach within three hundred yards of us, but are at liberty to approach the opposite shore, and lie at their docks, the disease has been communicated to them, first to the Wallabout, and next to Brooklyn, while New-York has remained totally exempt.* With this single fact before us, why should any man of common sense perplex himself to divine the origin of this epidemic, by having recourse to theories about "rivers, and lakes, and marshes, and swamps, and made ground?" In neither of the above villages are rivers, or lakes, or marshes, or swamps to be found; and as to "made ground," there is not a foot at the Wallabout, little at Brooklyn, and in New-York there is nearly as much at the North-river side, where the yellow fever has never first appeared, as at the east side; and be it pernicious or be it otherwise, this same made ground has been going on with the same industry and success, for the last six years, as before, during which a whole street nearly has been made on the North-river, yet the epidemic has not once appeared in the city, although it has in the same period of time twice depopulated the villages on the opposite side of the river. How long is theory to bear down plain and undisputed facts, and sophistry to stifle common sense? But, says Dr. Miller, as the materials of putrefaction and the degrees of heat in a large city, greatly exceed what is found in the adjacent country, so the diseases arising under such circumstances must be proportionally more malignant. Such is the doctor's reasoning, but such are not the facts. The yellow fever was as malignant and as fatal when it prevailed in the adjacent country villages, as it

was when it appeared in this city ; once introduced, there was no apparent difference.

We pass over the next head for the present, in order to come to the third question, viz. *Is the yellow fever a contagious disease?* The doctor, who has long stood pre-eminent among the non-contagionists, takes the negative of the question. "But (he observes) before proceeding to offer reasons in detail against the non-contagiousness of the yellow fever, it is proper to premise some general observations on the subject:" and then he goes on to give a definition of contagion, in which, like a dexterous combatant, he exerts himself to obtain a point, by defining it so as to suit himself, begging the very question in controversy. After talking very learnedly about secreting contagious matter by a morbid action "of the vessels," he says, "its action (the action of contagion) is altogether *independent* of external circumstances, such as the state of the air," &c. According to this, it must, to be sure, be admitted that the yellow fever is not contagious ; but then, neither is any known disease whatever. The small-pox, although allowed to be the most contagious of all diseases, is not independent of external circumstances. "If forty persons, (says he) who have never undergone small-pox, be closely exposed to the effluvia of a number of patients lying ill of that disease in the ward of a small-pox hospital, thirty-nine certainly, and probably the whole number, will be infected."

But has the doctor forgotten the case of the Royal George, on board of which, while at sea, the small-pox broke out, but nearly one hundred out of eight hundred and eighty totally escaped the contagion, and the disease disappeared altogether. Now, then, if the contagion of small-pox is so universal in its operation, as certainly not to spare more than

one, and probably not one of forty in a hospital, how is it to be accounted for that in the above case it should have spared about one hundred out of eight hundred and eighty? Will the doctor have the goodness to explain to us the cause of this difference? If it was not deprived in a great degree of its malignity in this instance of the Royal George, by being exposed to the ventilation of a constant sea-breeze, but is always altogether independent of external circumstances, to what was its comparative mildness owing? The doctor is not at liberty to say that in the hospital the air was less pure, for we have his word in the same paragraph, that "none of the truly contagious diseases derive any additional force from impure air." Neither will it do for him to say (as he does in p. 633) that "the greater contagiousness arose from the concentration of a greater quantity of contagious matter within a small space," because he afterwards (p. 676) says, although "the miasmata which produce yellow fever, are more or less noxious as they are more or less concentrated, yet *this is a property* which does not belong to the specific poison of smallpox." A man who thus contradicts himself without ceremony, sets refutation at defiance. We leave the doctor to his own reflections; but he must recollect, that the web in which he finds himself entangled is one of his own weaving.

"The agency of contagion in the propagation of the yellow fever," says he, "is rejected for the following reasons," and he proceeds to give us ten. They shall be examined in the order in which they stand. But before we go any further, it is certainly fit and necessary, that one should come to an understanding as to the subject of the dispute: What is meant by the contagion of the yellow fever? If Dr. Miller means one thing, and we mean

another, it follows, that we are not at issue, and all further controversy must be useless. By the contagion of yellow fever, then, we mean that peculiar species of contagion only which is peculiar to that disease ; we do not mean, as our antagonists have, more than once, strove to make us mean, the contagion of small pox, or syphilis, or measles, or any other contagion but that of the yellow fever itself. But they say a truly *contagious disease* is one that reproduces itself in the same manner, and with the same certainty, under all possible circumstances ; as if any such disease ever existed. This attempt on their part to place us on ground which we do not intend, and never intended to occupy, is both unfair and disingenuous. It may be an adroit method of managing a dispute, but it is doing the highest injustice to an adversary, and to the cause of truth. Nothing, perhaps, has contributed more to blind and mislead the public in this controversy, than this very artifice of representing us as having maintained a doctrine which we never advanced, and then undertaking gravely to refute it. This certainly they can do, but then they claim the honours of a triumph, as though they had gained a victory, when there has never been a contest. It is necessary the public should be completely disabused on this point ; and therefore, although we took some pains to explain ourselves in a late number of the Register, we shall do it once more, here.

When we say the yellow fever is a contagious disease, we mean to be understood as saying, and saying only, that it is a disease which, under certain circumstances favourable to such operation, may be communicated specifically from one person to another, either directly from person to person, or indirectly, by means of clothing, bedding, or any thing capable of receiving and conveying

the disease. This is precisely our meaning, expressed in the simplest manner, carefully avoiding all attempts to account for the manner how this is brought about, or how it operates; and therefore we say nothing respecting secretions or excretions, or morbid actions, &c. &c. a deal of which is sure to be brought forward on all occasions, as if the object of our antagonists was to perplex, in order to confound. We express our opinion in a word, when we say that the *yellow fever* is communicable from one person to another. But it is communicated, or not communicated, according to circumstances. This is the whole extent of our doctrine. Nor is it necessary to any useful purpose that we should advance a step farther. This doctrine, once established, we may then with propriety call upon our law-givers for a system of quarantine laws to prevent any intercourse whatever between the diseased and the healthy, as the only known, safe and certain course.

To what practical use, we ask, as it regards this subject, has all this learning been bestowed on secretions and excretions, and morbid action? And of what possible concern to the public is the distinction between koino-miasmatic atmosphere, and idio-miasmatic atmosphere? And why all this violent controversy which has been raised about the exact degree of certainty with which any disease must communicate itself, before it can be entitled to rank as a contagion? If only two out of twenty, for instance, become diseased by infection, to what purpose would you show the other eighteen escaped? If those gradually accustomed to its action escape altogether, to what valuable purpose is this mentioned as to those who, under different circumstances, do not escape? The only purpose, in either case, must be to show by argument, that the disease is not a contagious disease; but

this argument must vanish before the reply, "We acknowledge that, as to those who escaped, from whatever cause, the disease was not contagious, such was their situation, or such the circumstances in which they were placed, that they were not subjest to its action; but on the other hand, as to those who did not escape, the disease as to them certainly was contagious;" to argue, that it was not as to them, because it was not so as to the others also, is nothing less than to set up inference against fact. Hence it is, that the non-contagionists are so desirous of establishing their own definition, that a disease must be communicated with equal certainty in all places and seasons, independent of external circumstances, before it can be denominated contagious. If so, if this be the only correct definition of contagion, then we admit, that the yellow fever is not a contagious disease; it is only a *communicable* disease. But what advantage do the non-contagionists gain by this concession? They contend that no disease ought to be called *contagious*, that does not affect every one exposed to its action, and this under all circumstances and in all seasons; thus excluding the yellow fever from their list. We, on the other hand, maintain, that every disease which is communicated from person to person, under any circumstances, or at any season, is, *quoad hoc*, *contagious* or communicable, and that the yellow fever, therefore, comes within the definition. Why should not its introduction into our cities, we ask, be guarded against, if at first only one in fifty is liable to be attacked by it; since we know its nature to be to multiply in regular progression, and every new instance increases its force and activity, until from being at first but one in fifty, it soon becomes one in twenty, then one in ten, then one in five, until at length the atmosphere becomes so impure and infected, that not merely a majority of those exposed do not, but scarcely

one in ten does escape ; thus equalling in malignity and certainty the small-pox itself. Can we then, whether we call it contagious or communicable, can we be too anxiously vigilant to provide against its introduction ?

Our great object is to obtain a good and effective system of quarantine laws, and such, we contend, if well and faithfully executed, will forever secure the city of New-York against a disease which, when once introduced and become an epidemic, makes more frightful havoc than any other in the known world, the plague only excepted. The object of those opposed to us, is to show that the disease is not a contagious one ; that quarantine laws are absurd, because it is not possible to introduce it from abroad ; that it is the produce of our own climate ; to borrow their own libellous expressions, that " we live in the latitude of pestilence," and that, therefore, all attempts to prevent its introduction from a foreign country, are futile and ridiculous, while at the same time, these very gentlemen make so wide a difference between their theory and their practice, that for a bountiful reward, they have no scruple to undertake the superintendance of those very quarantine laws which they thus hold in derision.

" *Is the yellow fever a contagious disease ?*" This is the question before us in order. " The agency of contagion (says Dr. Miller) is to be rejected for the following reasons," of which he gives us no less than ten. Be it so. They shall every one be put fairly to the test in the order in which they stand. It will be a business of some labour, and will consume some considerable time ; but since the non-contagionists repose themselves on this body of learning and ingenuity, we will not be deterred by the length of the way from going through with it, and we trust we shall do so to the satisfaction of every impartial lover of truth.

(*To be continued.*)

DOMESTIC INTELLIGENCE.

Medical School of New-York.

In the last number of the Register, page 523, some account was given of the recent re-organization of the College of Physicans and Surgeons in the city of New-York, and a list of the appointments in that institution, inserted from the official report of the regents of the university. Though the laudable views of the regents, in uniting the respective talents of the two medical schools, have in a partial degree been frustrated, on account of the non-acceptance, by some gentlemen, of the professorships to which they were chosen, it affords us particular satisfaction to add, that the college is now in a most promising state of advancement. As an evidence of this fact, it need only be stated, that at the first medical commencement in this institution, held on the 15th of May last, (subsequent to the late act of the regents) the degree of *doctor in medicine* was granted to the following eight young gentlemen, who had previously undergone the necessary private examinations, and publicly defended their respective inaugural dissertations. This was a greater number of degrees in medicine than was ever before granted at one time in this city, since the establishment of a medical school in New-York. The honours of the college were conferred by the learned and venerable president, Samuel Bard, M. D. in the presence of the chancellor and regents of the university, the trustees of

Columbia college, &c. &c. besides a numerous assemblage of persons.

THEODRIC ROMEYN BECK, A. M. of Schenectady. "*On Insanity.*"

WILLIAM E. BURRELL, A. B. of New-York. "*On Bubonocele.*"

GERARDUS A. COOPER, of New-York. "*On Worms in the Intestines.*"

CASPAR WISTAR EDDY, of New-York. "*On the Analogy between the Animal and Vegetable Structure.*"

JOHN WAKEFIELD FRANCIS, A. B. of New-York. "*On Mercury.*"

HENRY RAVENEL, Jun. of South-Carolina. "*On Trismus Nascentium.*"

THOMAS EDWARD STEELL, A. B. of New-Jersey. "*On the Digitalis Purpurea.*"

SAMUEL ARMSTRONG WALSH, A. B. of New-York. "*On the Origin and Nature of Yellow Fever.*"

We shall only add, that such arrangements have been made in the college, by the board of trustees, that a complete course of instruction, in the various branches of medical science, will be given in this institution on the ensuing winter, as will be seen by the following circular:

UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons.

(CIRCULAR.)

The several courses of instruction will commence, as usual, in this institution, on the first Monday in November. The session will be opened by an address from the President.

Since the last winter important additions have been made to the chemical apparatus, a laboratory has been built, and the chemical lecture-room has been so al-

tered, as perfectly to accommodate the students attending Dr. Mac Neven, the professor of that science.

Such provision has been made by law for the anatomical department, that Dr. Smith, the professor of anatomy, will give a complete course of demonstrations, and will also illustrate his surgical lectures, by performing all the operations, practicable upon the healthy subject, in the presence of his class.

Dr. Hosack will lecture on the theory and practice of medicine, and a full and complete course will also be given on obstetricks, and the diseases of women and children.

The above series of Lectures constitute the Winter Session; the Spring Term, which commences on the third Monday in April, consists of Lectures on Natural History, and on Botany; the former by Dr. Mitchill, the latter by Dr. Hosack.

The lectures on natural history are illustrated by a large collection of mineralogical and geological specimens; and an elegant museum, to which the students can have access, affords every facility for the acquisition of zoological knowledge.

The botanic garden having been purchased by the state, and placed under the direction of the college, the students of botany will have an opportunity of visiting that establishment whenever they think proper, and of examining the many rare and valuable plants which it contains.

The various courses of instruction delivered in the college, are so arranged as to form a complete system of medical education; and the trustees and professors confidently promise, that no exertion on their part shall be wanting to fulfil the just expectations and liberal views of their patrons, the legislature and the regents.

The professors are bound to examine all applicants for degrees, and to report to the regents such as they approve, on or before the first day of March in every year. The diplomas are then granted, and the degrees are conferred in this city, on the first Tuesday in May, the candidate having previously delivered to the professors, and defended at a public examination, a thesis on some subject connected with medicine. The thesis may be printed at the discretion of the graduate, with the approbation of three of the professors.

By order of the College,

SAMUEL BARD, M. D. President.
JOHN W. FRANCIS, M. D. Register.

New-York, June 8, 1811.

Medical Society of the County of New-York.

At an anniversary meeting of the Medical Society of the county of New-York, held on Monday, the first of July, 1811, the following gentlemen were duly elected charter officers of that institution:

Dr. JAMES TILLARY, President.
Dr. WILLIAM MOORE, Vice-President.
Dr. JOHN ONDERDONK, Treasurer.
Dr. WALTER W. BUCHANAN, Secretary.
Dr. WRIGHT POST,
Dr. WILLIAM HAMMERSLY,
Dr. EDWARD MILLER,
Dr. RICHARD S. KISSAM,
Dr. VALENTINE SEAMAN,
} Censors.

Remarks on the recent valuable publications of Mons. Dufief, of Philadelphia, Nature Displayed, in her mode of teaching language to Man, adapted to the French language, 2 vols. 8vo.; *and a new Universal and Pronouncing Dictionary of the French and English languages*, 3 vols. 12mo. *Communicated for the Register, by a Correspondent.*

WHOEVER observes the numerous improvements to which this country has given birth within a few years, amidst the tranquillity and welfare of its inhabitants, must feel much gratified by the new and successful mode of teaching languages, which Mr. N. G. Dufief has recently applied to the French tongue. In saying this, we do not fear the reproach of being partial, because two editions of *Nature Displayed* have been already disposed of within a few years, and a third one, now under our consideration, bids very fair for an equally rapid sale. In order to assist his useful plan, Mr. D. has also published an extensive French and English dictionary, connected with many glossaries and treatises, and included the whole in three portable and neatly printed volumes. Before we attempt, however, to inquire into the merits of this last publication, we beg leave to present our readers with an explanation of the method of Mr. Dufief.

On the authority of Locke, Condillac, and other eminent writers on the operations of the human understanding, he abundantly convinces us in his introduction, "that language and grammar are two very different objects, in no ways analagous, the former as physical, the latter as metaphysical, and that instead of teaching language by

grammar, we should say that grammar is taught by language." This doctrine is very plain, and we imagine that it cannot admit of controversy, as long as we find that man can learn and speak his native language without the help of grammar. It is generally known that the famous Montaigne, who spoke almost all the European and dead languages, acquired them by *nature's method*, having been kept, from his infancy, by servants and teachers, whom his father had severely charged always to converse with him in their respective tongues. And for further testimony we might mention, that the most ignorant and poorest class of people, of certain districts of different nations, are distinguished for purity and correctness of language; such are those of Sienna, in Italy, of Blois and Tours, in France, of Old Castile, in Spain, and of Wraxham, in England.

Upon those self-evident principles, Mr. D. directs his pupils through the more important parts of the language he wishes them to speak. He offers to their attention and memory an infinite number of short sentences, composed of all words that natural wants and elements of knowledge could suggest. These form different vocabularies, always presented with a lateral or marginal column of the principal words that are to be remarked in the annexed phrases. To find a link to all these words, we have next all *articles*, *pronouns*, *adverbs*, *conjunctions*, &c. to be reviewed in the same practical mode, when the learner feels himself already enabled to take his part in *conversations*, *dialogues*, and *dramatic scenes*. Thus the first volume is artificially calculated to produce the same effect, as various excursions in foreign countries would afford to an intelligent and observing traveller, or as the many years of our infancy, from the lap of parents, and

throughout our juvenile plays, have enabled us to prattle upon every thing, even before we could be sent to school.

It was not the intention of Mr. Dufief to put entirely in disuse grammatical rules for teaching languages. Having declared that grammar is the critical knowledge of a language, or a collection of observations upon custom, he only contends that the learner should be possessed of something upon which rules and critical information might be exercised, and this task he successfully discharges in the second volume, by the *analysis of the parts of speech*, and by *a syntax made easy*.

The two principal divisions of this volume are very methodical, and by their arrangement, with the correctness of the typographical execution, form a work much beyond common praise. The selection of materials for *reading* and *conversation* highly recommends the literary taste of the author, and points out a considerable range of excellent works in the French language, which he has made to contribute as models for the acquirement and nice discrimination of its beauties, genius, elegance, and correctness.

In the Universal and Pronouncing French and English Dictionary, Mr. Dufief has afforded us a rare example of what perseverance and industry can achieve within a short space of time. It is printed on a nonpareil type, in three duodecimo volumes, and contains 2226 pages. A short but critical examination of this work has not given us any reason to doubt of its correctness. We observe, besides, as a new improvement, that all the definitions and explanations of words are made in the vernacular tongue. Mr. D. deserves great praise for having paid so much

attention to the numerous persons learning the French language in this and other countries.

A dictionary cannot be much extended beyond the list of customary, necessary, and legitimate parts of speech; hence the most celebrated works of this kind in all languages seldom contain technical words belonging to arts, sciences, mythology, geography, seamanship, &c. Readers must therefore be supplied with as many different dictionaries as there are subjects connected with their respective avocations. This is the reason why they have lately contrived in London small portable boxes, containing various pocket dictionaries. But Mr. Dufief has obviously provided for every possible exigency of the kind, as his work embraces no less than thirteen or fourteen dictionaries, useful glossaries, and instructive treatises, completing thereby the collection of all that is necessary for conversation, oratory, commercial, and other professional avocations. We must also observe, that this work, in comparison with the quantity of matter and elegance of typography, is offered at a very moderate price.

We wish Mr. Dufief the liberal reward which his undertaking is likely to receive in point of profit; that of honour, for meritorious talents and industry, is no doubt already permanently secured to him by an enlightened public.

Steward's Philosophical Essays.

The Philosophical Essays of Dougal Steward, Esq. the latest performance of this distinguished Scotch writer, are now in the press, and will shortly be published by Messrs. Whiting and Watson, of this city.

American edition of the Edinburgh Encyclopædia.

Proposals have been issued by Messrs. Parker and Delaplaine, of Philadelphia, for publishing by subscription, in 12 volumes large 4to. a new and augmented edition of "the EDINBURGH ENCYCLOPÆDIA, conducted by David Brewster, L. L. D. fellow of the Royal Society of Edinburgh, and the society of the Antiquaries of Scotland, with the assistance of eminent professional gentlemen."

It is with uncommon satisfaction we announce to the American people the republication of this truly valuable and splendid work. We shall not at present enter into any detail relative to its peculiar excellence; but content ourselves with observing, that, though but very recently projected by its learned editor and his able associates, such has been the general conviction of its superior merit, by the British nation, that it has surpassed in patronage every production of a similar kind. It appears to be the particular design of the present publishers not merely to offer a transcript of the English copy, but to adapt the work to the American public, by rectifying such errors, and supplying such omissions, as must unavoidably occur, respecting this country and its concerns. For this purpose they have obtained the co-operation of a number of American gentlemen, eminent in the various departments of science and literature, and we rejoice that it is their determined purpose not in the least to interfere with the integrity of the British text: that the improvements of the work are to be made solely by *additional* matter. May we be permitted to suggest to the enterprising individuals engaged in this great undertaking, wholly to abstain from factious politics, and polemical

divinity. Let the original articles be devoted chiefly to an exhibition of our numerous inventions and discoveries in philosophy and the arts; to an illustration of the physical geography and history of our country; let them bring forward its neglected biography; and let every line be written in the sententious manner and true spirit of the original. The Edinburgh Encyclopædia, thus executed (and we know this to be the object of the publishers) will prove a magnificent repository of human knowledge, honourable to those concerned in its execution, and eminently worthy of the liberal support which it will doubtless receive from the American nation.

Population of the United States, 1810.

Virginia, (including the blacks)		966,079
New-York,		959,220
Pennsylvania,		810,163
Massachusetts, (proper)	472,040	700,745
Maine,	229,705	
North Carolina,		563,526
South Carolina,		414,935
Kentucky,		406,511
Maryland,		380,546
Connecticut,		261,042
Tenessee, (west)	160,360	261,727
(east)	101,367	
Georgia,		252,433
New-Jersey,		245,562
Ohio,		230,760
Vermont,		217,913
New-Hampshire,		214,414
Rhode Island,		76,931
Delaware,		72,674
TERRITORIAL GOVERNMENTS.		
Orleans,		76,556
Mississippi,		40,352
Indiana,		24,520
Columbia,		24,023
Louisiana,		20,845
Illinois,		12,282
Michigan,		4,762
Total		7,238,421

Observations on the Weather of the City of New-York, for the months of April, May, and June, 1811.

APRIL.

On the 1st and 3d of this month there fell a small quantity of rain. On the night of the 7th we experienced a severe storm of hail, accompanied with more rain. Thermometer, at 7 A. M. at 37, at 3 P. M. at 45, and at 7 P. M. 39. From the 7th to the 10th the weather was clear and agreeable, wind chiefly from the south. On the 10th it again commenced raining, which on the 11th greatly increased, and was accompanied with snow; wind north-east. The weather for the ensuing week, though again pleasant, was unusually warm for the season; thermometer generally, at 7 A. M. at 46 or 50, at 3 P. M. about 68, and 7 P. M. at 64. On the 21st more rain fell, accompanied in the night with a very strong wind from the north-east. The remaining days of the month were somewhat cooler, occasionally overcast, with but little wind, and frequent appearances of showers.

MAY.

The month of May was characterized by great extremes from heat to cold, for the season. Though the commencement of the month, and for a few days, was of an agreeable temperature, the weather of the 14th was extremely warm and oppressive. On the 18th, however, the change had been so great, that we had frost in the morning, and also on the 19th and 20th, a circumstance very unusual. The wind during this time was also very strong from the north-east. It now became overcast, and a small quantity of rain fell on the

22d. The three following days were clear and pleasant: on the 26th and 27th very warm, there being little air, and the solar heat very great. Thermometer, at 7 A. M. 64, at 3 P. M. at 76, at 7 P. M. at 67. On the 28th and 29th a small quantity of rain fell. On the 31st clear, and wind from the southward.

JUNE.

The weather of this month was particularly distinguished for its immoderate heat and great dryness, and for the consequently great injury done to the progress of vegetation, so as in many places to have altogether destroyed it. The first four days were clear and very warm, little wind from the south-west. Thermometer, at 7 A. M. at 72, at 3 P. M. at 76, at 7 P. M. at 70. On the 8th clear and refreshing breezes, and on the 9th refreshing showers. On the 10th an additional quantity of rain fell, acompanied with thunder and lightning. The 13th and 14th again extremely warm; but little air, and the solar heat very great. On the 15th and 16th light showers, accompanied with but little wind from the south-west. From the 19th to the 23d, inclusive, uncommonly warm; thermometer being at 7 A. M. at 80, at 2 P. M. at 90–92, and 7 P. M. at 80. The heat now became more moderate, and on the 27th there fell a little rain. Thermometer at 72 at noon. On the 28th the weather became so cool that many persons resorted to their winter clothing, and blankets were comfortable.

Observations on the Diseases of New-York, for the months of April, May and June, 1811

The city of New-York, during the greater part of the last three months, having been uncommonly healthy, our observations upon the diseases for that period will not be numerous.

The ordinary inflammatory complaints, arising from change of season, were met with in the months of April and May. A few solitary cases of *scarlatina* also appeared in different parts of the city, but scarcely extended beyond the individuals whom it first attacked; the character of the disease was also remarkably mild, attended with very little affection of the throat. Some cases occurred of *cynanche maligna*, in which the ulcers of the fauces assumed a very malignant aspect, requiring the use of the most active stimulant and antiseptic remedies. *Intermittent and remittent fevers* were among the complaints of this season; in some instances the latter disease was protracted into *typhus*, especially among the poor, whose confined and crouded apartments do not admit of the necessary attention to cleanliness and ventilation which this disease requires; and who also too frequently neglect to call for medical aid in the commencement of their complaints; to both which causes the greater severity of their febrile disorders are generally to be ascribed.

In the month of June, owing to the vicissitudes of the weather, and the very unusual degree of heat for the season, *cholera* and *diarrhœa infantum* have frequently occurred among children: the relative mortality of these diseases in the city at large we are not enabled to record,

the corporation for some months past having ceased to publish the weekly obituary. In our own practice, we have again had reason to approve of the treatment recommended in the cholera of children ;* we refer more particularly to the use of small doses of ipecacuanha and rhubarb, and the warm bath during the first or febrile stage, and the chalk mixture and country air in the second stage of the disease. The saline atmosphere of the sea-shore is particularly beneficial in this complaint, and we cannot too earnestly recommend early recourse to this remedy, not only in the cure, but as the preventive of that deadly disease, which we do not hesitate to say destroys more children than all the other diseases of infancy combined.

But the heat of June was not only productive of diseases among children ; in many cases *cholera morbus* and *bilious colic* attacked adults with great violence. These were especially induced by imprudent exposure when heated, to a stream of air, and the sudden changes of weather which, as already noticed, occurred in the month. Although these last diseases are generally considered by physicians as complaints of the bowels, we have been led to view them as diseases of the whole system, and frequently as connected with a febrile state of the body, and in many instances with a plethora of the blood-vessels. The habits of body most subject to attacks of this sort, viz. those of a gross, lax fibre, who live a sedentary life, are accustomed to full feeding, and in the free use of stimulating drinks ; the symptoms which precede an attack of this disease, such as pains in the head, vertigo, propensity to sleep, with a sense of numbness in the extremities ; the exciting causes of the disease, viz. excessive heat, expo-

* See Vol. I. p. 220—1.

sure to a stream of air, or cold applied to the extremities when the body is heated, the sudden removal of an accustomed piece of clothing, as flannel, worn next to the skin; the immense discharge of fluids from the liver and serous vessels opening into the intestinal canal, which constitutes cholera, the irritation of the abdominal viscera in bilious colic, all lead to the opinion above stated, that they are frequently diseases of the whole system venting themselves by these evacutions. The excessive hemorrhages which frequently take place from the liver, stomach, and intestines, during the hot season of the year, are no less favourable to this opinion.

The observations made by Dr. Dewar,* upon the connection which subsists between disorders of the bowels and other diseases, such as pneumonia, rheumatism, and eruptive complaints, and their alternate operation upon the system, serve to show that the former, like the latter, are dependent upon the general condition of the blood-vessels. We also accordingly find, that blood-letting, as in cases of hemorrhages, is among the most effectual means of restraining those excessive bilious and serous secretions which occur at this season of the year. It is not to be understood that the lancet is to be had recourse to indiscriminately in every case of cholera. The prostration of strength induced by the evacuations spontaneously produced, as in cases of hemorrhage, will forbid the use of this remedy. But where the disease occurs under the circumstances before stated, in a full habit of body, and the physician is called before great debility has been produced, blood-letting, as in restraining sanguineous discharges from the larger vessels, will frequently produce immediate relief by diminishing the excessive evacu-

* See Observations on Diarrhœa and Dysentery, as they appeared in the British Campaign of Egypt, in 1801. p. 37.

ation which takes place from the liver and serous vessels of the intestinal canal in these diseases. Cases of this sort have frequently fallen under the observation of the writer of this article, in which he has been compelled to employ the lancet, where the remedies ordinarily prescribed, viz. rhubarb, magnesia, emetics, &c. have been administered without success. In those cases attended with great pain in the stomach and bowels, or with spasmodic affections of those organs, the warm bath and blisters have also been applied, in conjunction with the lancet, with manifest advantage, and probably have afforded relief upon the same principle, by diverting the irritation from the internal organs to the external surface of the body.

RECENT AMERICAN PUBLICATIONS.

A Guide for Young Shepherds; or, Facts and Observations on the Character and Value of Merino Sheep; with Rules and Precepts for their Management, and the Treatment of their Diseases, as well as of Sheep in general. Collected from the latest and best writers on these subjects, and confirmed by the experience of the author and his friends. By Samuel Bard, M. D. &c. 12mo. New-York. Collins & Co.

A Treatise on a Malignant Epidemic, commonly called Spotted Fever, interspersed with Remarks on the Nature of Fevers in general, and with an Appendix, in which is republished a number of Essays written by different authors on this Epidemic, with the addition of original Notes, containing also a few original and selected Cases, with Clinical Remarks. By Elisha North. 12mo. New-York. T. & J. Swords.

Observations on the Climate in different parts of America, compared with the climate in corresponding parts of the other Continent. To which are added Remarks on the different Complexions of the Human Race; with some Account of the Aborigines of America; being an Introductory Discourse to the History of North Carolina. By Hugh Williamson, M. D. & L. L. D. Member of the Holland Society of Sciences, of the Society of Arts and Sciences of Utrecht, of the American Philosophical Society, &c. 8vo. New-York. T. & J. Swords.

Anniversary Oration, pronounced before the Society of Artists of the United States, on the 8th of April, 1811. By B. H. Latrobe, Esq. Philadelphia. Inskeep & Bradford.

Observations on the Establishment of the College of Physicians and Surgeons in the City of New-York, and the Proceedings of the Regents relative to that Institution. Communicated in a Letter to James S. Stringham, M. D. Professor of Chemistry in Columbia College, by David Hosack, M. D. 8vo. New-York. C. S. Van-Winkle.

The Baltimore Medical and Philosophical Lyceum. By Nathaniel Potter, M D. Professor of the Theory and Practice of Physic in the College of Medicine, Maryland. Vol. I. No. 1. for January, February and March, 1811. Baltimore.

An Inaugural Dissertation on Insanity, submitted to the public examination of the Trustees of the College of Physicians and Surgeons in the state of New-York, (Samuel Bard, M. D. President) for the degree of Doctor in Medicine, on the 14th of May, 1811. By Theodric Romeyn Beck, A. M. Licentiate in Medicine of the Medical Society of the county of New-York. 8vo. New-York. J. Seymour.

An Inaugural Dissertation on the Use of the Digitalis Purpurea in the cure of certain Diseases; submitted to the public examination of the Trustees of the College of Physicians and Surgeons, &c. By Thomas Edward Steell, of New-Jersey. 8vo. New-York. T. & J. Swords.

The Political, Philosophical, and Literary Works of Benjamin Franklin, L. L. D. &c. &c. comprehending his Secret Journal at the Court of Versailles, &c. (4 volumes published.) Philadelphia. W. Duane.

PROPOSED AMERICAN PUBLICATIONS.

By Seymour & Williams, Savannah—The History of Georgia, from its first settlement under the government of General James Edward Oglethorp, to the commencement of the American Revolution. With an Introductory View of the present state of the country, its Climate, Soil, Productions, Population and Extent, &c.

By E. J. Coale, Baltimore.—An Introduction to the History of Maryland. To which is added, a Sketch of the History of Maryland, during the three first years after its original settlement. By John Leeds Bosman, Esq.

TO CORRESPONDENTS.

An Original Letter of the late Dr. Benjamin Franklin, giving an account of the first formation of the American Philosophical Society, and another paper written by the same distinguished philosopher, both recently found among the manuscripts of the late Gov. Colden, and politely presented to the editors, for publication, by C. D. Colden, Esq. shall appear in our October number.

A Letter from Dr. Chisholm, of Clifton, (Eng.) addressed to Dr. David Hosack, in answer to his Observations on Contagion, will also then appear.